CHINESE CHRYSANTHEMUMS.

BENDIGO CULLINGFORDII. SAM SLOAN

NOVEMBER, 1889.

THANKSGIVING, the great festival of the present month, now become national, was first instituted as a harvest feast, and in a broad sense it still maintains this character, and, as such, it is a proper subject for our consideration. The farmer, the gardener, the fruit-grower, stand first in relation to the direct products of the soil. Whether Mother Earth is kind and generous, or stern and stinting, the soil cultivator first perceives and feels her moods; he feels most keenly the storm and the sunshine; he sees most clearly how all his efforts are dependent upon the propitious play of the forces of nature. As we review, therefore, our season's work, as we look upon our banded sheaves, our garnered grain, our fields, and our flocks, as we taste the ripe clusters of our vines or sip their sweets, we live over again those hopes and fears that have attended us the past twelvemonth, as we have anxiously worked and watched and waited for the returns for all our labor and care.

As we look abroad over the land, how diversified appear the returns that farmers and gardeners have received. In all the records of the country there cannot probably be found an account of so unequal a distribution of rewards to the tillers of the soil. Heat and cold in excess, floods and droughts and destroying winds have devastated fields and forests. While some have received smiles, the frowns of our great mother have been plentiful, and many in our land feel their tasks to be hard. It is unnecessary to go much into particulars, for few of all those who may read these lines do not know more about disappointed hopes, of one kind and another, among gardeners, fruit-growers and farmers than could possibly here be given in detail. To name winds and frosts, and hail and water floods, and droughts, and destroying insects, and fungi, is to call up the specters of the evil genii that have deliberately stalked through many sections of our land. Some of these are evils against which no human foresight or skill or energy could forefend or prevail, and of none of them could their inflictions be wholly prevented. What lessons may be learned from these various experiences are subjects for consideration at other times. So far as they may be productive of future good, let us hope that each may have his full share of profit thereby. But, now, let us turn away from this reckoning of accounts, this debit and credit of personal affairs.

The festival of Thanksgiving, which was at first an expression of gratitude for the harvests and all the good things we enjoy, has come, in course of time, to mean much in regard to family ties and family joys. As we allow our thoughts

to wander over the land, and on Thanksgiving day see gathered under many a roof all the near and dear ones, how we shudder as we contemplate some localities where the storms that ruined our crops, there devastated towns and hamlets, sweeping away tenements and dwellings, carrying to sudden death often whole families, or taking some and leaving others, only to continue a life of sorrow. These cases are not a few, not to be numbered even by hundreds, but thousands in the full enjoyment of health and life have been ruthlessly borne to death in its most horrible forms. As we reflect on these calamities, how insignificant appear the partial losses of our crops, and how much better is the condition of those whose garners are spare, than it might have been. But, if looked at in this light, the advantage appears to be negative, let us see if we have no positive gain that we may put down to the credit of our account. When the news came to us of the horrible work of the floods, and again of the wind, our hearts went out in earnest sympathy for those surviving sufferers and friends. At those times we felt how near to us were those whom we had never known, how strong was the human tie that binds all mankind in one brotherhood. And when came, again, from a far distant land, how a flood there had claimed its thousands of victims, and our sympathy was awakened afresh, the bonds of brotherhood broadened, and our thoughts went away from our own cares and trials and placed us face to face with our fellowmen with a keen sense of humanity that knows no boundary lines of family, or nation, or race. To this soul-training have the elements subjected us in this present year; and may we not consider these deepened sympathies, this broadened humanity as so much positive gain, which the whirlwind and the flood have left to us while, like destroying angels, they have carried death and desolation to thousands. Little we know of the Everlasting Power that is operating to ennoble and perfect the human race, but we may recognize, to some extent, the meaning and the trend of events, if our minds are not too intent on our own personal and material affairs.

Without reviewing the many causes that conspire to the welfare of the people of this republic, we may as tillers of the soil, notice the benefits accruing to us as a class by the rapid and comparatively cheap transportation of goods in all directions throughout the country. Thus, when any special crop is deficient in one locality or region, a supply is received from others, and the frugal and industrious are placed beyond danger of want, and when nature pours out from her sack most plentifully, we have ready means of disposing of a surplus to our own advantage and that of the whole public.

As a class, the tillers of the soil occupy a special place in the councils and the administration of the nation, and their affairs are affairs of state. And this is no mere name without any special reality; on the contrary, the highest scientific ability is engaged to solve the many important problems that relate to practical agriculture and horticulture. Some of these problems will require many experiments and many years to elucidate; but the good results already attained by the Department of Agriculture and the Experimental Stations are now affecting the culture and treatment of many of our crops.

The better ways of operating which science thus offers are available first to the more studious and intelligent of the community, who either place themselves in direct relation to the scientific workers, or who learn, through the press, of what transpires, but through the example of these all advanced practices ultimately become common to the whole body of workers.

One of the ways in which we may well show our thankfulness, is by using the means of advancement placed within our reach, and encouraging others to do the same. It is estimated that only a small proportion of farmers and gardeners take regularly an agricultural or horticultural paper, and many of them believe that they cannot afford such a luxury. There is not a farmer or gardener or fruit-grower in this land that can afford to do without the help that he can receive through a good class journal; month by month, and year by year, he is the loser who believes to economize in this short-sighted way.

Agricultural and Horticultural Societies, and farmers' and gardeners' clubs, are means for advancement which no

soil-worker should neglect. If membership in these societies should become general, better crops, fewer losses and pleasanter homes would rapidly follow.

Now, in order most surely to effect the end here proposed, we may best begin with the children. Speaking of the country as a whole it may be said we want better schoolhouses. How many school districts are not absolutely mean in their school accomodations, mean to their own children? Rooms insufficient in size, poor in arrangement and furniture, poorly heated and ventilated, are made to do duty for generation after generation in their own poor way. And then we want better teachers, as a class, in our country schools, and that means that they must be better paid. Good teachers cannot be found to fill the places for the salaries that are paid, and as a result the children are poorly trained and taught. What better way can we show our thankfulness for all that we enjoy than by beginning at home and giving to our children the mental training and cultivation that will enable them to come forward as noble men and women, ready to do their part in every good work in the community? This is a practical way to benefit humanity.

CHRYSANTHEMUM CULTURE.

Chrysanthemum culture in this country has not yet reached its highest state of developement if we may judge by the events of the times. Local societies are increasing in numbers and many of the larger cities will hold shows the present month. At the late meeting of the Society of American Florists a Chrysanthemum Society was organized, which we understand is to be national in its scope, but particulars in regard to it have not yet been received. To some it may seem strange that societies should be organized and shows held for one kind of flower. But it must be considered that at the season when the Chrysanthemum is in perfection few other flowers are in bloom. The reasons for the popularity of the Chrysanthemum are the great variety in form and color of the flowers, the great susceptibility of the plants to cultivation, being capable, by care and attention, of being moulded to the will of the cultivator; and this is true both in regard to producing varieties from seed and in training and growing individual plants. We know of no plant in the whole round of horticulture which will respond more promptly and generously to the attention it receives than the Chrysanthemum. The plants can also be kept in bloom a long time, and with proper care can be brought forward in succession. Our September issue contained a plate of some Japanese varieties; in the present number some fine examples of the Chinese class are shown. Cullingfordii is a rich crimson with a scarlet shade, a magnificent large flower; the plant is a strong healthy grower. Of its color there is nothing superior to this variety, and the color is so fine and yet so rare among Chrysanthemums that the variety will be largely cultivated. Bendigo is a fine golden yellow, —a color hard to do full justice to in a plate; the flower is very full, and of globular form, a most excellent sort. Sam Sloan is a handsomely formed, large flower, of a pale blush or soft rose color. These flowers are good examples of the large, regular flowered varieties. The Chrysanthemum is a plant that anybody can raise for it is hardy and vigorous, and will bear a great deal of rough treatment; but no plant shows better the treatment it receives than this, and those who will train themselves to raise good plants of Chrysanthemums will find that they have learned, in so doing, the needs of a great variety of plants, or, in other words, have so far learned and comprehended the nature and wants of plants in general, that they have caught the real spirit of practical horticulture. The soil, the watering, the pruning, the training, the disbudding, all greatly affect the plant.

The organization of village clubs for raising and showing Chrysanthemums in generous rivalry would prove an excellent means of encouraging horticulture in general. And an improvement in raising plants, an improvement in the practices of the plant cultivator himself, would have a wide effect—it would be seen not only in better ornamental plants, but better plants in the kitchen garden, better vegetables and better fruits. To raise one plant well is a long step towards good gardening.

PRUNUS TOMENTOSA.

A contribution to our gardens, from Japan, which is yet but little known, is the shrub shown in the engraving herewith. Prunus tomentosa is a low-growing shrub, the extreme height of which does not exceed four feet. From its mode of growth it might be considered a dwarf tree rather than a shrub, as it has a short trunk rising from the ground, which at about a foot in height sends out numerous branches. It might be inferred from the illustration that the specimen here figured had a greater height than that mentioned above, but this appearance is due to the photographer

PRUNUS TOMENTOSA.

setting his instrument low. The photograph was taken on the 7th of May last, when, as may be seen, the plant was covered with bloom. The flowers, which in form are like the Cherry and Plum blossoms, are white with a flesh-colored tint at the base. The plant is quite hardy, standing fifteen degrees below zero, as we have it here, wholly uninjured. It is probably capable of bearing a considerably greater degree of cold. The leaves are slightly rugose, and quite pretty. The plant holds its foliage well and in good condition all summer. It is an admirable companion for Prunus triloba, the flowers of which are pink, and which has somewhat the same habit of growth. Shrubs of the character of growth and foliage, like these species of Prunus, and which do not throw up suckers can be planted on lawns in many situations where Spiræas, Deutzias, and other shrubs which sucker, would properly be objected to.

SOME THOUGHTS ABOUT LAWNS.

NUMBER 2.

The reader will kindly remember that in these articles I am speaking only of the farmer's lawn, or, if you will, his "door-yard," which, I believe, he has a right, and even a duty, to make as pleasant as he can. As a rule, what he does here he must do cheaply, and it is satisfactory to know that the finest effects can be often produced at a very slight cost. In my first article I spoke of the best way to get a good sod. In many door-yards this already exists. The next thing is the planting; and here, I think, great improvement may be had with very little expense. The old-fashioned way of a straight row of one kind of tree, generally set much too near the house and too near together, with Rose bushes and Lilacs under the front windows, had altogether a too stiff and uninteresting look. There are few farmers who cannot afford a liberal door-yard of at least half an acre. Now, what shall be set out to shade and ornament this plot, after he has graded and grassed it? Well, I think, he need not go very far to get the very best trees and shrubs for the purpose. The natives he can get in his own pasture, or by the roadside, and the exotics he will need are common and cheap. It is a great mistake to think the costly plants of the catalogues are the best. The best kinds are those that will grow easily, and as these grow easily in the nurseries, too, they are generally sold cheaply, unless they are quite new, in which case it is just as well to wait. It is not as though there was any scarcity of good things; on the contrary, "the woods are full of them."

First, about the trees. I am myself fond of nut trees, and like the Beech, the Butternut, the Chestnut and the Oak about the house for that reason. They are handsome as well as good, and they not only ornament the ground and give shade, but the nuts give pleasure to children and visitors. I would not have them set out in straight rows, at even distances, because they look ever so much better the other way. Still, we must not have them in the way of teams, or so placed as to hamper freedom of movement about the premises. Certainly they ought not to be close to the house, where the dead leaves will foul and rot the roof, and where the heavy shade causes dampness within and without. Give your family a chance to breathe, and to look out of the window and see something. Try to imagine how large the trees will be thirty years hence, and how they will look. If you feel sure that you will be willing to thin them out as they grow, there is no objection to pretty close planting at first. This certainly relieves the sense of bareness and rawness common to a new place. Quick-growing evergreens are very good for this purpose. They do not sprout from the root when they are removed, and they fill a large space to the eye, even when quite young.

Besides the nut trees, we want some Elms, some Maples and some Birches. The White Elm and the Slippery Elm, the Sugar and White Maples, (and for shrubbery the Pennsylvania and the Mountain Maples) are good trees. The Canoe Birch and the Yellow Birch rapidly grow into noble trees that are very satisfactory to the eye. A Cut-leaved Birch you would be well justified in buying for its light elegance in contrast with heavier forms. A Mountain Ash, preferably the European, and two or three Viburnums, such as the Tree Cranberry, Sheep Berry, Arrow Wood and Black Haw are all hardy and good for filling in. So, also, are the Red Osier, the Flowering Dogwood, and the Swamp Alder.

To the same use we may put different species of Lilac, the Barberries and the Thorns, of which there is a great variety. But if you begin by putting all these in pretty thickly, you must remember to thin them out before they begin to crowd the ground and injure one another. There should at all times be plenty of room to go around between all the trees and shrubs without inconvenience.

Here and there you want a few evergreens, and the best are, I think, the White Pine,the White Spruce, the Hemlock and the Pitch Pine. The last two, planted near each other, make a pleasing contrast, enhancing the effect of each. A deciduous Conifer, the European Larch, is also good. A Basswood (Linden) is not to be despised. Among Willows I

like some form of the Golden and the Laurel-leaved. A single Lombardy Poplar, rather far from the house, has a pleasing effect seen over nearer spreading trees. A large-flowered Crab Apple, two or three June Berries (Amelanchier) and a flowering Cherry give the brightness of their bloom to mingle with the leafage of May and early June.

And now, what next? We have talked about the grading and grassing of our door-yard lawn at the farmer's home, and said something of the very much that might be said about the trees and the shrubs which can easily be got to plant around the premises for pleasure and use. Quite a number of the shrubs and trees mentioned bear beautiful flowers, followed by ornamental fruits in their season. But a tree planted lawn needs something more to brighten it, and here come in the hardy perennial plants, many of which are becoming very popular in "wild gardens." It is very easy to have a wild garden among our trees on the lawn. Some glorious plants, the Golden-rods and the wild Asters, the Dogbane (Indian Hemp), the Willow-herb (Fire-weed, Epilobium), the Evening Primrose, the Solomon's Seal, the wild Iris, have all pre-empted spots on my lawn, of their own accord. But I have given them company. Perennial Phloxes and Pæonies, both tree and herbaceous, grow very well among the trees. Lilies of the Valley and Narcissus are quite at home, the first close to the trees where the grass is thin, and the latter any where among the grass. The wild field Lilies grow there, too, and the spotted Tiger Lily. It must be remembered that I urged a liberal enriching of this house acre before seeding it with grass, and sufficiently frequent dressings afterwards to keep it in good heart. Besides this, I advise covering the clumps of perennials with a manurial mulch in the fall, through which they will shoot up vigorously in the spring. Strawy cow manure is as good as anything for this purpose.

I cannot say that individually these lawn-grown flowers are as fine as we can grow in a tilled garden. We must regard their beauty in mass rather than in detail to feel them to be satisfactory. There are dozens of other flowering plants that might be named for this sort of planting. Many Honeysuckles, Daphnes, Spiræas, Aristolochia, Celastrus, even a wild Grape vine, will find a chance for itself and grow into beauty among the trees. But all this must be kept within bounds, and any plant which takes too much upon itself to the injury of neighbors, must be restrained, or even uprooted. And all the time we must remember that space should be allowed for everybody to go freely about. Thorny plants that will catch and tear clothing have no place where we want to walk at ease. A place for a swing should be reserved.

This brings me to the last part of what I now have to say about the farmstead lawn. Family games, the out-door games of summer, must be provided for. Everybody, almost, plays croquet, and lawn tennis is rapidly becoming an equally popular game. The boys also want a place to play ball, and at least the small boys can be allowed a chance upon the small area reserved for the two home games referred to. These ought, of course, to have as level a spot as possible, with trees around it for shade, but not too near. Seats may be provided beneath these trees for weary participants or elderly on-lookers. It is well worth while to take considerable pains with this play ground, so that the games may be played in a satisfactory manner, and skilled players be satisfied with the facilities for displaying their accomplishments. The levelling ought to be done with care, and a fine, thick June Grass sod secured by good preparation of the ground, liberal seeding, and a regular but moderate use of the lawn mower. These things take time; but "the labor we delight in physics pain," saith the poet, and both the boys and the girls of the family will willingly help to prepare the ground devoted to social recreation and the entertainment of visiting friends and kinsfolk. All that I have indicated can be carried out nicely on the space of a single acre. If less is to be devoted to this use, of course there must be curtailment in proportion, and it must be left to every one to decide how much to do. But I assure them that there is no better way to rear a family in contentment, and "keep the young folks on the farm," than to recognize the claims of social recreation and association there all the year round.

T. H. Hoskins, M. D., *Orleans Co., Vt.*

SMALL FRUITS ON THE FARM.

No one so fully appreciates the value of small fruits as the wife of a farmer, who has a household to supply with food of sufficient variety to keep monotony at bay from the daily bill of fare. Variety is said to be the spice of life, and certain it is that variety in daily food lends zest to the appetite. With nothing but flour, potatoes and meat at hand—and little else will be found in the majority of farmers' homes as a base of supply—it is very often perplexing for the housekeeper to contrive such dishes as will contain the variety required. It is true that meat and potatoes and flour may be prepared in various ways, but they are meat and flour and potatoes after all, and therefore not as pleasing as a change would be to something wholly different, no matter how nicely prepared. I am aware that some women seem to think it unnecessary to "humor the men-folk" by catering to their desire for "something new," but such women are not good housekeepers, for they do not understand how necessary it is to have a frequent change to keep the appetite from becoming cloyed, and they lose sight of, or ignore, the fact that such change is necessary to the preservation of good health. Physicians recognize this important fact, and often advise entire change of diet as a means of bringing back a lost appetite.

With a garden well stocked with small fruits, farmers' families ought never to complain of monotony in the bill of fare. Nothing is more healthful than fruit, and by the easy and cheap process of canning we can have it the whole year through in such delicacy and naturalness of flavor as to be almost equal to fresh fruit. I am glad to note that the old method of preserving is going out of fashion.

On a small plot of ground enough fruit can be grown, if proper care is given, to supply a family of ordinary size three times a day the year through. I am aware that this statement may seem a rather broad one, but those who have a "little garden, well tilled," will bear me out in the assertion. It is surprising to those who have had no experience in this line to find out how much can be grown on a very small piece of ground, if proper attention is given. It does not require such an amount as one often imagines it must, because the regular use of it on the table has a tendency to prevent as great indulgence in it as would naturally be the case were it used only as a delicacy brought out on extra occasions. Used regularly, it becomes a sort of appetizer, and really acts as a tonic of the best kind. Its pleasant acid tones up the system and whets the appetite for a keener appreciation of more solid food. It is a direct aid to digestion, and those who eat of it regularly are seldom troubled with those ailments which call for pills and physic. The fruit eater is seldom bilious.

Has the housekeeper strawberries in the store-room? Then there will be short-cake on the table in winter time, whose odor brings back a breath of the vanished summer. Or a saucer of them will add its delicate aroma to the charms of the neatly spread tea-table, as well as delight to the palate. And there will be puddings and pies and other confections which the good housekeeper takes pride in preparing for the members of her household. Are there currants? They will add a keener relish to the breakfast. Their grateful acidity will stimulate the stomach to a better performance of its day's work. With meats they give a relish which would be wholly lacking without something of a similar character. Get in the habit of eating spiced currants with roast, and you would as soon think of having turkey without its accompaniment of cranberries as of going without them. Dried currants make good pies, and are delicious when stewed, and can be made to take the place of raisins in cakes and puddings very satisfactorily.

Then there are Raspberries, Grapes, Plums, Cherries and Tomatoes, all easily grown, all easily taken care of and all enjoyable. With such a variety to draw from there need be no complaint of sameness from day to day, and the appetites and health of the household will be improved.

By all means set out plenty of small fruit. Have a row of Currants, a bed of Strawberries, Raspberries along the fence, and Grapes wherever a support can be arranged for them. If you have never tried your hand at small fruit culture, make up your mind to experiment in it, and the chances are, if you take care of the "venture" with which you

start out, you will be so well pleased with your success that in a year or two you will "branch out" until you have all the fruit your family requires. It is just as easy to care for a garden of this kind as it is to properly cultivate a field of Corn. but most farmers have got the idea into their heads that it is puttering work, and nothing will get this idea out of their heads except a trial, which will be sure to convince them that no other parr of the farm pays so well, all things considered, as a good garden.

EBEN E. REXFORD.

A BEGINNER IN FRUIT-GROWING.

A young friend has applied to me, as may be seen by his letter below, for information in regard to fruit growing. I have decided to answer him through the MAGAZINE, and possibly some others may also be benefited. The following is the request:

TULIPVILLE, Ohio, September, 1889.

On the 17th of October I shall be of age, and come into possession of nineteen acres of good land, a clay loam, left me by my grandfather, and I want to engage in fruit-growing. Thirteen acres of it is plowed land, and the rest a ravine or hollow, with a small brook running through it. Six acres of the thirteen is in Corn and Potatoes, the balance in wheat stubble. Now, I know the difference between a Raspberry and a Blackberry, and that budding is in some way different from grafting, but this is about all. Can you tell me the rest, and what I can do this fall to make a beginning?

JOHN SUNFLOWER.

Without wasting words of surprise over the largeness of my friend SUNFLOWER'S wants, I will endeavor to give some suggestions that may not only serve him, but possibly many readers of the MAGAZINE, simply premising that I was once a beginner and speak from a hard-earned experience.

One of the most productive and remunerative of fruits is the Currant, and not, for several years back, to be found in excess in any market. It is propagated from cuttings, which are best planted in the fall, generally in September, but later will do, if mulched, so as to keep out frost. In most every community somebody has a nice row of bushes, and the offer of one or two cents a piece will induce the sale of one hundred cuttings, which, properly cared for, will give, in a year from planting time, ninety-five good thrifty bushes, that would cost at going prices from $5.00 to $8.00. The cuttings, six or more inches long, should be planted about six inches deep in an inclined direction, in rows two feet apart and three or four inches between cuttings. The soil should be very rich and very fine, and after the cuttings are planted, mulched with two inches of fine manure, and before December 1st, with eight inches of leaves kept in place with brush or poles. The rows may be of any length, and if the cuttings are placed with the inclination in the direction of the rows most of the cultivation the following summer can be done with a cultivator.

Grape cuttings can also be put in in the fall, good healthy wood being used, making the cuttings of two or more joints, cutting diagonally just below the lower bud and having the upper bud just beneath the surface when planted.

It is a good idea when planting other cuttings to put in a few of those of Weigela, Snowball, Deutzia, hardy Hydrangea and Forsythia. They root about as easily as Currants, and by the time the house is built and the door-yard graded, you will have some nice and beautiful shrubs for grouping on the lawn.

Gooseberries and Quinces are also grown from cuttings, but they are more apt to succeed when layered around the parent bush.

Cuttings of all kinds are generally wintered in the cellar in sawdust or sand, but I prefer to plant in the fall, and then the plants are ready to start in the spring. The only precautions necessary are to mulch in the fall, so that the ground will not freeze, and not uncover in the spring until about May 1st, or later.

Of course, I need not tell you that good stakes, legibly marked, should be stuck at the termination of each variety in the row, and it is more important that they should be long enough to reach below frost than to be fancy and showy.

It is not necessary that one should raise plants from cuttings, as all kinds can be bought, but it is an excellent discipline, tending to carefulness and skill, and if done in the latter part of October does not interfere with other work as experimenting might, if attempted in the spring. In my first work in this line I found considerable satisfaction, and before I knew it, had a surplus that found a ready market, and assisted me in purchasing such things as I could not, or did not wish, to grow.

With three or four exceptions I do not see much advantage in fall planting. Currants and Gooseberries start into growth very early and are better planted in the autumn. Pie Plant and Asparagus also can be planted in the fall, and time saved for something else in the spring. Seedling Cherries for budding the next summer, Blackberry roots and Apple trees I buy in the fall and heel in until spring, although both the latter can be permanently planted in the fall, but in consideration of the fact that some catch crop will be planted among them it is best to wait, simply planting a close group, protected from mice and rabbits.

Whether you buy a full outfit of small-fruit plants, or a few, and raise the balance depends upon the length of your pocket book, the condition of your land, and your ability to make a living while waiting for the plants to come into bearing. I judge that your land is ready for immediate use for growing fruit; but in case it be sod or stumpy, or very poor, it would be best to wait two years, and while getting the ground ready grow the plants on a small tract of rich ground.

I will give you some points on the rapidity of increase, and by consulting some reliable price-list you will be able to judge as to your course. A good, strong Hilborn, Souhegan or Gregg Raspberry plant, set next spring, on very rich ground, can be made to branch into sixty tips, each one of which will root into a plant. This is much beyond the average, and you can figure on an increase of from twelve to twenty-fold. Suckering Raspberries, like Turner and Cuthbert will, under favoring circumstances, increase one hundred-fold in one year, a dozen plants making enough in two years to plant several acres. From a good, strong plant of Taylor's Erie, or Minnewaski Blackberry grown from a root cutting and dug with all the roots, one hundred or more root cuttings two and one-half inches long can be cut, that properly managed will make ninety or more plants another year. One thousand such cuttings packed in four layers, with moist earth, in a small, shallow box, and buried below frost in a dry place, will callous during winter, and planted in a drill one inch deep at corn-planting time, will make $40.00 or $50.00 worth of plants by fall with proper care.

A neighbor, last autumn, set out half a dozen Fay's Prolific Currants, strong one year plants, and I think that each could furnish twenty seven-inch cuttings without injuring the plants or over-pruning.

I once layered from a Houghton Gooseberry bush, three years old, one hundred and six plants in a single summer.

Orange Quince bushes cost $16.00 to $20.00 per hundred at two years of age, yet a single stock can be made to grow from twenty to fifty in a single summer, yet in this case it requires four or five years to get the stock into proper shape for extensive layering.

I shall not in this, or further letters of advice, go much into the consideration of varieties, but devote the limited space at my disposal to methods of procedure. Be guided in regard to kinds to plant, by successful gardeners in your own vicinity and go slow on novelties. L. B. PIERCE.

SHRUBBY GREENHOUSE PLANTS.

Rhynchospermum jasminoides is such a handsome, graceful plant that its absence from many fine collections of flowers is a matter of regret and surprise. It is a beautiful, hard-wooded, greenhouse climber, with thick, heavy, glossy leaves, like those of the Lemon tree. Its pure white flowers, shaped like those of the Jasmine, are borne in clusters, and are exceedingly fragrant. It flowers very freely, and a climbing stem of it in bloom is an elegant ornament to any window. It is not a showy plant, but its delicate beauty and wonderful sweetness give it a

strong hold upon all cultivators of refined taste, and immediately award it a place among the "classics."

It is somewhat dainty about its likings, and a strong soil does not suit it. Garden loam, sand and leaf-mold seem to meet its requirements fairly well when mixed, and it is fond of moisture, likes to have its leaves sprinkled, and a light shade the greater part of the day. Cuttings taken from young growth, not too sappy, root easily under a bell-glass.

Another "classic" is the Myrtle, Myrtus communis. It grows to be a large, compact, shrubby plant, thickly set with shapely branches, and, when well grown, these branches are covered with small, white flowers, having a rich fragrance. The leaves are evergreen and shining, and when brushed or bruised they also are fragrant. It must have plenty of pot room, delights in being bedded out in summer, and a rich soil, such as you would give Roses and Carnations. Three things must be closely guarded against in growing the Myrtle, hot sunshine, sour soil from imperfect drainage, and the red spider. Sprinkle the leaves daily, shift into larger pots occasionally, and do not give too high a temperature. For bouquet work it is very valuable, and grown into a large, handsome shrub it is ornamental in a high degree. Cuttings of the young wood root easily. There is a double variety, also, which is said to be very beautiful, but I have never seen it.

Viburnum Tinus, the Laurestinus, a native of Southern Europe, often grows to be quite a tall shrub. Its leaves are not so handsome as those of the plants described above, but are dark green, thick and leathery, and when, in midwinter, its great flat clusters of small white flowers appear, and all the air is sweet with their perfume, you think yourself repaid a thousand fold for the little trouble it has given. The Laurestinus grows, with little pruning, into quite a shapely plant, loves a loamy soil, a low temperature, and to be watered sparingly, It is not subject to insects, but shower it often to refresh the leaves and keep them clean. It can be reared almost or quite as well in the window as in the greenhouse. A temperature of from fifty to sixty-five degrees is the most that it needs in winter, and in summer it can be plunged in the open border in its pot.

Olea fragrans, the sweetest of all sweet flowers, with its clustered sprays of waxen white, and dark green leaves, like those of Kalmia latifolia, has proved somewhat capricious with me, although it is generally thought easy of culture; but, I think, I have suited it at last, with a loamy, well enriched soil and a shaded situation. The flowers, though not specially pretty, are highly prized for their rich and subtle fragrance.

L. GREENLEE.

A TREE'S RECORD OF ITS LIFE.

It is not known to every one that a tree keeps a record within its stem of the character of each successive season since it began its growth. If a Peach tree, for instance, be examined after it has been cut down, the ring of wood formed in each year will show by its amount whether the summer of that year was warm or dry, or otherwise favorable or adverse; and by the condition of the wood, the character of the winter will be denoted. Severe early frost will leave a layer of soft, decaying wood; and later frosts will be indicated by a change of color, if nothing more.

If a summer has been so dry as to cause a total rest between the growths of June and September, the annual ring for that year will be a double one, and sometimes barely distinguishable as one, but liable to be taken, by a not very close observer, for two different years' growth.

At a late meeting of the Botanical Society of Edinburgh, Sir ROBERT CHRISTISUN gave the results of measurements of large trees of different species, made annually on lines of girth marked permanently with paint. In the very unfavorable season of 1879, the deficiency in summer temperature was nearly ten degrees. In seven Oak trees, of different species, the deficiency in annual increase of girth was ten per cent. In eleven other deciduous trees, it was forty-two per cent; and in seventeen Pines it was twenty per cent, different species of the same family giving very nearly similar results.

W.

FOREIGN NOTES.

POINSETTIAS.

For many purposes dwarf plants are preferable to tall ones, and various methods have been adopted to attain this end; we have found it best to root the tops of well developed shoots. Make them into cuttings in the usual way, removing no more leaves than is actually necessary, and taking care not to allow the others to flag before they are put in, nor afterwards, if it can be avoided. Sometimes a little difficulty is experienced in rooting the cuttings, but cannot this often be traced to wrong conditions? An easy and excellent method is to prepare a gentle hot-bed, over which an ordinary garden frame may be placed. When the heat has settled down to a gentle warmth, prepare the cuttings, inserting them singly in small pots, and tying up the leaves loosely, then plunge them into the bed; tree leaves form good plunging material; shade carefully from bright sunshine, and dew them over as often as may be necessary to maintain a humid atmosphere. but the moisture arising from the fermenting materials will go a long way toward keeping this matter right. No more air than is just required for ventilation should be given, a small chink usually being sufficient, until the cuttings are well rooted, when less shading is required. As they get well rooted shift into the five-inch pots for flowering in, using a rich soil, and pot firmly. Stand them in a mild airy temperature as close to the glass as possible.

F. R., in *Gardeners' Chronicle.*

IVY-LEAVED PELARGONIUMS.

The double-flowered varieties bid fair to oust the single flowered sorts alike for bedding as for pot culture. It is with the former phase that I wish more particularly to deal. Their most appropriate use is as trailers to hang over the sides of vases or to train to trellis work. I have, however, used them with excellent effect in small beds, and if the growth is never allowed to become crowded the plants will continue to bloom till sharp frost sets in. The scarlet, rose, pure white, and pink colors now to be found amongst the double section will, I think, tend to popularize the plants as bedders, and there can be no doubt of their fitness as trailers if planted in groups on banks to droop over the sides of large vases. I have tried my hand at raising seedlings, but the results have not been sufficiently satisfactory for me to commend the practice, and propagation by cuttings from well known kinds is at present the only mode I feel at liberty to advise, and now is the time to propagate them.

W. W., in London *Garden.*

ZINNIAS FOR EXHIBITION.

These have become favorite exhibition flowers, but unless they are well staged they, however good, make but a poor display. When shown, as in the case of Dahlias, a dozen blooms distributed over a Dahlia stand, they have but a poor effect, but when shown as Mr. JOHN WALKER, of Thame, shows them, the blooms arranged in a stand of small dimensions, and having about four inches of stem with leaves, they are then highly effective. Double Zinnias are now so fine that they deserve to be shown in the most effective manner; the flowers are well formed and singularly bright in color, full and symmetrical, and always greatly admired. They seem to restore to us something of the florists' Ranunculus, and we have scarcely any other flower that can come near them in the month of August for brilliancy of color.

R. D., in *The Garden.*

ADIANTUM FARLEYENSE.

For four or five years I had three of Adiantum Farleyense in pots, one large, one medium, and one small; sometimes they did better, and sometimes worse, but never well. One day a gardener asked me if I had ever tried one in a hanging basket. I put the small specimen into a home-made receptacle of iron wire. In three months it grew more than it had grown three years in a pot. My gardener followed the same system with the other two; the largest plant was bas-

keted in October last, and it now measures three feet in diameter as it hangs naturally. Staked out, the measurement was five feet six inches. I may mention that the two others are bidding fair to catch up, if not to surpass, the large one, and that there is only one plant in each basket. Hardening off is a bad business with these Ferns. Whether they come from Barbadoes or Bermuda, they hail from a climate where they always grow in damp, moist heat.

I. W. S., in London *Garden.*

ANEMONE JAPONICA IN POTS.

I lately saw this plant used with good effect in the decoration of a conservatory. The plants in question had been lifted and potted in the spring before growth was far advanced, and had been grown in the open during the whole of the summer until the flower spikes appeared, when the plants were removed to the greenhouse. At the time I saw them the plants were just expanding their flowers, and presented a very charming appearance grouped with other flowering and foliaged plants, the pure white blooms being very effective. This Anemone well deserves extensive cultivation for this purpose. C., in London *Garden.*

CAMELLIAS.

The Camellia (C. Japonica, LIND.) is everywhere indigenous in Southern Japan. It grows to a good sized tree in the mountain forests of Kiushiu and Tiukoku, often at an elevation of 800 m. above the sea; it extends into the deciduous forests, where it is distinguished for size above all the other evergreens, except Conifers. It is found with the evergreen Oaks on the south-eastern coast of Hondo as far as the 36th parallel, and as a large bush on the Bay of Yedo. The northern limit of its natural growth on the coast of the Japan sea is the hill country of Northern Echigo, about 38° N. latitude. I found it there in the Pine and bush forests as a bush 1 m. high. In Southern Kiushiu trees of 10 m. high and 1.4 m. circumference are frequently seen. I found this size, however, only among cultivated trees. I saw here also often the parasite, Viscum articulatum, BURM., on its branches. In its wild state the Camellia blossom is a simple red flower, which never opens to the full, but remains half closed, like a Tulip.

Industries of Japan.

PRIMULA JAPONICA.

This plant is the best of all the Primroses, with its six tiers of flowers on each stalk, and its hardy nature. In the herbaceous border here, these plants have been very effective. It is an easy plant to grow and increase, which latter is done by division, and by sowing the seed as soon as it is ripe. The seeds soon germinate if sown in pans of light loam and leaf-mold in equal parts, and mixed with silver-sand, and placed in a cold-frame. When large enough, the young plants should be pricked off into pans, and placed again in the frame, and as soon as they are strong enough planted out in rich soil. They soon grow into large masses.

W. SMYTHE, in *Gardeners' Chronicle.*

PRONUNCIATION OF DAHLIA.

We seem to be in a fair way to have definitely settled the true pronunciation of the word Dahlia. Mr. HIBBARD admits that it should be pronounced Dahli-a, but that, on the whole, it is better to adhere to the old style of Dalea, omitting the pronunciation of the important *h* altogether, remembering that the plant is named after DAHL, the Swedish botanist. It does seem obvious that the pronunciation should be such as to impress upon the mind of the listener or learner the idea that the name of the Dahlia is purposed to honor that of DAHL, and not some one of the name of Dale. To that end, I hold that the proper pronunciation should be Dahl-ya, making it as it were two sylables only, and such as brings into prominence its name parent.

A. D,, in *Gardener's Chronicle.*

CHRYSANTHEMUM CULTURE.

[*Continued from page 311.*]

Top-dressing.—At the end of the first week in July I top-dress the plants by filling up the space that was left in the pots when the plants were placed in their flowering size. The material I use is the same that I advise for the first potting. Feeding by the aid of liquid should be discontinued for a fortnight or so until the roots take possession of the new soil. I again top-dress in September, and this time I have to exceed the limit of the pots. The pots are filled level full of soil, the same as I use for potting. I then get about a bushel of fresh cow manure, and add to this a peck of night-soil, or the same quantity of

fowls' or pigeons' manure, and as much dry soil as will, when well mixed together, make the whole about the consistency of mortar. I then get two old bricklayers' trowels—large knives will do just as well—and commence to form a rim on the outer edge of the pot, and about an inch or so on the soil inside the pot. The rim will then be one and one-half inches or a little more through, and if it is made about one and one-half inches high, will hold sufficient water for the plant. It is not only necessary to enable the cultivator to water the plants properly, but it also acts as a good stimulant to them, for the water and autumn rains carry down to the roots the fertilizing ingredients that it contains. Feeding by the aid of liquid from the farmyard should be carried out carefully and judiciously, as very often autumn rains keep the soil too wet for the well being of the plants; and applications of liquid cannot be given them without adding to the evil over which we have no control.

By rich top-dressings the plants are largely independent of the water-pot. I think I told you in autumn last how valuable I had found the liquid from an undrained closet. This I use at intervals of two or three days. For instance, I water with liquid from the farm, then give clear water for two days, then resort to that from the closet, when the next application is required. Another good liquid, and one that the Chrysanthemum enjoys, is made from the following: A bushel of cow or sheep manure and one peck each of soot and lime, mixed together, tied up in a sack and placed in a hogshead of rain water. If the bag is squeezed and knocked about in the tank the liquid will be fit for use in about two days, and it should be diluted with three parts of water, increasing the quantity of liquid as it becomes necessary to fill up the tub. Hen and pigeon manure tied up in the same way make an excellent stimulant.

Soot and Chemical Manures.—During wet weather, when stimulants in the form of liquid cannot be administered without the risk of saturating the soil, soot may be sprinkled on the surface. It acts quickly, and imparts to the foliage a fine dark hue. I have tried the majority of artificial manures that are sold in the market. I apply these on the same principle as the soot during showery weather, and no doubt occasional applications of these patent manures, used with care, promote activity at the roots. At the same time I wish it to be understood that if the weather should be hot and dry instead of showery, I prefer using the liquids previously named, as they are of a cooler nature.

Sulphate of ammonia and nitrate of soda are very dangerous, and should be applied with considerable caution. Any plant that is late, or has been topped late, will be pushed forward quickly if a pinch is given on the surface during rainy weather—that is, if the cultivator has no better method of using it. I prefer putting a six-inch potful into the hogshead when the other liquid is getting weak, and it is quite safe used in this manner. I continue using liquids until the blooms are cut, discontinuing only for a short time when the plants are first housed.

The tops of the pots will be found to be a complete network of white healthy roots to the last, but strong stimulants in the last stages of growth should not be given; in fact, in no stage of growth, as it is much better to apply them weak and more frequently, as the plants derive more benefit than from occasional strong doses, and there is no risk of injurious results following. My advice on feeding the Chrysanthemum is to keep on the safe side, for overfeeding will bring the plant to a standstill for a long time, a quantity of the lower foliage will fail, and it is a question if the cultivator can get the plants right again during the season.

Syringing.—Another matter I practice is syringing the plants three or four times a day during hot weather; in the morning about ten, and again at noon, and often twice afterwards, and I am certain that the plants enjoy this treatment, for they are impatient of the burning sun and hot, dry air, especially after a few dull days. The frequent syringing prevents the plants showing signs of distress, which they would quickly do by the enormous evaporation taking place from their stems and leaves.

Wood Ripening.—I do not think this of much importance. If there is such a thing as wood ripening I should be glad to know how it is done. All I have found necessary is to let the sun and light reach the stems of the plants on all sides. If we are to place such importance on this ripening process, how do trained plants that are grown about Liverpool produce such fine blooms when they are trained half-cone shape, the foliage completely covering the stems of the plants throughout the season? Yet those plants produce blooms of such excellence that would do good service on first-class stands. How does the wood ripening in this case come about? For my part I fail to see it. I have been convinced for a long time that the secret lies in taking the bud at the proper time and leaving the ripening to take care of itself.

Securing the Plants.—I advise one stake to be placed to each plant, the shoots to be slung to this and allowed to sway loose, and also a line of tar twine to be strained to posts (the height at which the line is to be placed can be judged according to the variety), higher in the middle of the row, and sloping down to each end. When the growths have reached six inches or eight inches above the line they should all be tied at equal distances to it, which is much better than tying them to laths, as some cultivators recommend. If the shoots should grow to the extent of needing further support they should again be slung to the stake above the line. I find this simple way of securing the plants handy at the time of housing, as the line can be cut, and as all shoots are secured to the stakes the plants can be quickly moved.

Mildew.—If mildew has attacked the plants, which is often the case at this time, they should be laid on the ground and thoroughly syringed on the under side of the foliage with the following mixture: A three-inch potful of sulphur placed in a four-gallon can of rain water, and two wineglasses full of lemon oil, or a piece of soft soap about the size of a walnut. If the soap is boiled for ten minutes with about a quart of tobacco water so much the better.

Housing the Plants.—In placing the plants in the house I select those most advanced and place them at one end, where shade can be given if the weather should be bright, and the late ones in a house where heat can be applied if it should be needed. When the plants are accustomed to their new quarters the whole should be fumigated with tobacco smoke, for it is very difficult to destroy green fly when they establish themselves in the base of the petals. I have observed the plants "sulk" after housing, owing to the loss of night dews to which they have been accustomed outside, so I give all the air possible, and syringe the plants two or three times a day according to the weather. Feeding is also stopped for a few days. It will be noticed that the plants come to a standstill for a short time. It is therefore best to keep the foliage damp, and to let them have pretty well their own way for a few days.

PLEASANT GOSSIP.

NATURE'S MINISTRY.

How gently Nature guides us! Take her hand
And she shall lead thee through the fairy-land
Of beautiful existence. Round thy head
Fancy will weave her garlands; for thy tread
A carpet of delight, and a sweet hint
Of life renewed shall glow in thy cheek's tint,
Soft, bright and luminous; and thy glad eye,
In which a love of life's delights shall lie,
Shall shine as a new luster, as the stream
Takes on new light with each bright penciled beam.

To Nature's influence ope thy bosom's door,
And likelier guests shall bide there than before;
A heaven-born love illuming everything;
Sweet thoughts borne upward on thy spirit's wing;
And aspirations which all heavenward yearn,
Like the sweet odors of some incense urn.

Ah! life has deeper, purer, holier springs,
And all created seem as sacred things
When we draw nigh unto sweet Nature's heart,
And feel the Antean strength she can impart.
How all her votaries she loves to bless!
She leads to health, and hope, and happiness,
And by her tender touches tunes the strings
Of the heart's hard-worn harp, until it sings
The melodies of Heaven. Calm must they lie
Who would know most of Nature's ministry.

That soul knows truest worship who can find
The link which binds to GOD all human kind;
Sweet hope and aspiration fill his life
Too full of joy to be at outward strife,
And all his being sets with steady force
Through life's short circuit to its heaven-born source;
While faith, like a fair angel, flits before,
To ope, with love's bright key, Heaven's golden door.

DART FAIRTHORNE.

CRAB GRASS ON LAWN.

I enclose a sample of grass, and, if possible, will you please give me some light on the subject. I take pride in keeping a nice lawn, and last spring, as usual, I thought I had as nice a lawn as it was possible to have, but in July and August the grass enclosed made its appearance, and the Blue Grass has to take a back seat. As I said, it came about the middle of July to August, and then begins to look brown and dead early in the fall, and it makes a lawn look wretched. People here have various theories about it. Some think it because it is kept mowed close. Some that it is caused by sprinkling the lawn Some claim it goes to seed and comes from the seed each year, and the old root dies. If you will notice, it hugs close to the ground and the shoots run out under the Blue Grass and go to seed. It makes a perfect mat and completely chokes out the Blue Grass in July and August. It seems to thrive best in the sun; where it is shady the Blue Grass seems to have the advantage. What do you think is the cause, and what will remedy it?

I will state the lawns that are mowed only two or three times a year with scythe, and no artificial means of watering, there is none of this grass.

A. C. S., *York, Neb.*

The specimen received was Panicum sanguinale, or Crab Grass. This is an annual, ripening its seed each year, and the plant dying down in the fall. How the seed got into the lawn inquired about we cannot say, but as we have seen it appear all at once in well established lawns, it is more than probable that the seed is brought by birds. After it once gets a footing it can propagate itself if the conditions are favorable. Of course, it can more easily find lodgement in a lawn that is frequently mowed and sprinkled than in one not so treated. To dig up the ground and re-seed it might be the very means to enable more of these seeds to grow which are now in the soil. Our advice would be to commence as early in summer as the grass can be distinguished and dig it out, never allowing a plant of it to go to seed; this should be followed up from year to year, but after the first year less of it will appear, and it can thus be kept in subjection, or, at least, until in time of some fancied security the watch for it is omitted, and it again gets a footing.

GOLDENROD IN CALIFORNIA.

A writer in the *Pacific Rural Press* has the following to say of this favorite native flower:

The much-talked-of Goldenrod is one of our fall flowers which nod to us as we pass along the road. One or two of its many varieties, found in various localities of our country, we frequently meet. One of these grows to the height of two feet, its tufted weight of golden-yellow tassels bending gracefully and swaying in the breeze. Another kind grows taller, is more erect, and has a greater wealth of blossoms.

Shall we adopt this as our National flower?

WALL SCREENS.

A fine specimen of Ampelopsis Veitchii growing on a house is shown on this page. This plant is becoming a great favorite trained in the manner shown. As a mask for the foundation of a house, nothing can be finer. With a little care it can be confined to a certain portion of wall. If left to itself it grows upward as well as spreading laterally, several feet

JAPAN IVY ON A HOUSE WALL.

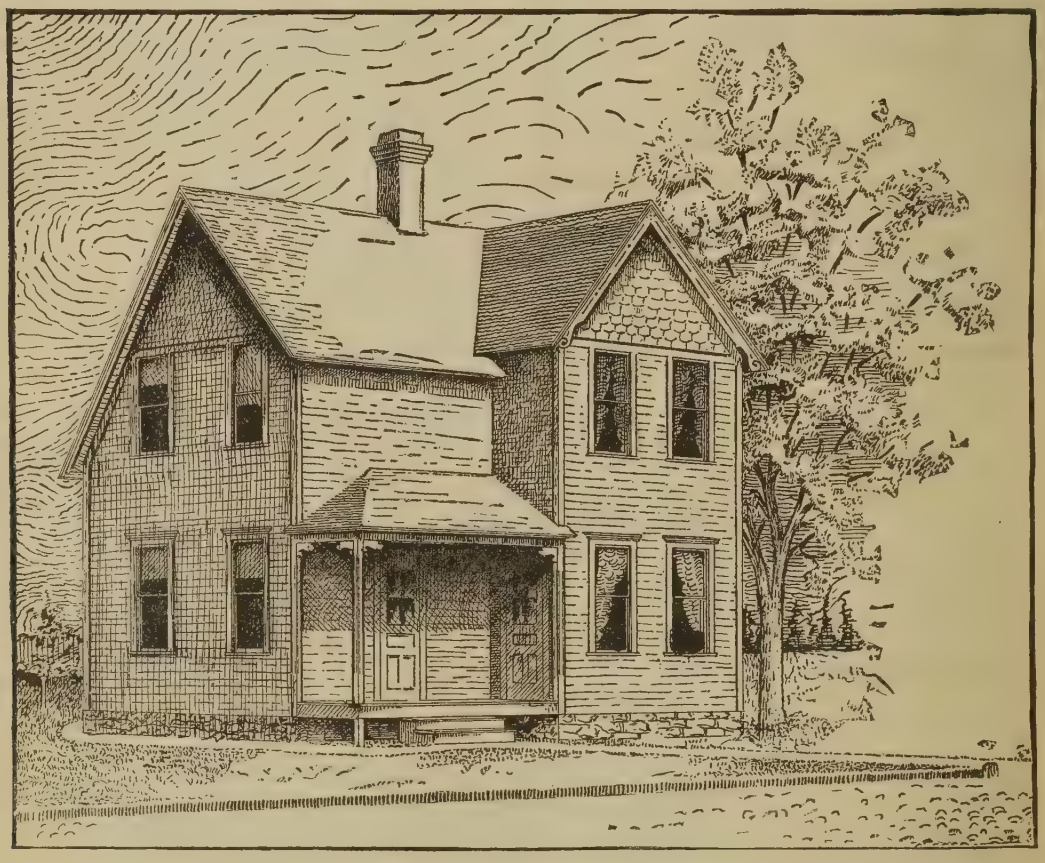
each season. We notice that every year there is more attention given to planting about the bases of villa residences and cottages, either with the Japan Ivy or with herbaceous perennials that will more or less screen the foundation walls, a most laudable object, as the hard lines where the walls and the lawn meet are not pleasing. In making plantings of this kind some care should be used to have the soil light, free and rich, and of sufficient depth to retain a good share of moisture. The situation is one that is apt to be poor and dry unless specially provided for. We should not select the location for raising Roses, though we frequently see them planted in this place. Herbaceous perennials of different habits and heights are preferable unless the Ampelopsis is employed.

RAISIN GRAPES OF CALIFORNIA.

There are two principal varieties of Grapes, according to Professor GUSTAVE EISEN, of Fresno, cultivated for raisins in California. The raisin vineyards of San Bernardino, Orange and San Diego Counties consist exclusively of the Muscat of Alexandria. The vineyards of Fresno and Woodland, on the other hand, consist nearly as exclusively of the Gordo Blanco. This last is the principal raisin Grape of Spain. There is a third variety in limited cultivation which appears to be intermediate between the two varieties mentioned above. It was brought from Spain under the name of Muscat of Alexandria, but is not that variety. The variety to be recommended, says the same authority, is the Gordo Blanco. The meaning of the name is thick white. The origin of the Gordo Blanco is not given, and probably may not be known.

A SIX-ROOM COTTAGE.

It has always been a mystery why so many cheap houses are ugly and inconvenient. The object of this plan is to show that a convenient and attractive little house may be built for eight or nine hundred dollars. The rooms are all of good size. One chimney accommodates the entire house. There are good closets opening from all the bed-rooms. Cup-



board in kitchen, and cellar under dining-room. The frame is balloon style, paper-lined, height of stories nine feet first story, eight feet six inches second story. This house could be built in the neighborhood where designed, of hemlock finishing lumber, and no cellar, for seven hundred dollars. With cellar and pine finishing lumber for eight hundred dollars. Or, if moulded casings on interior, and natural finish is desired, for nine hundred dollars.

C. M. ROBINSON, Arch't, *Philipsburg, Pa.*

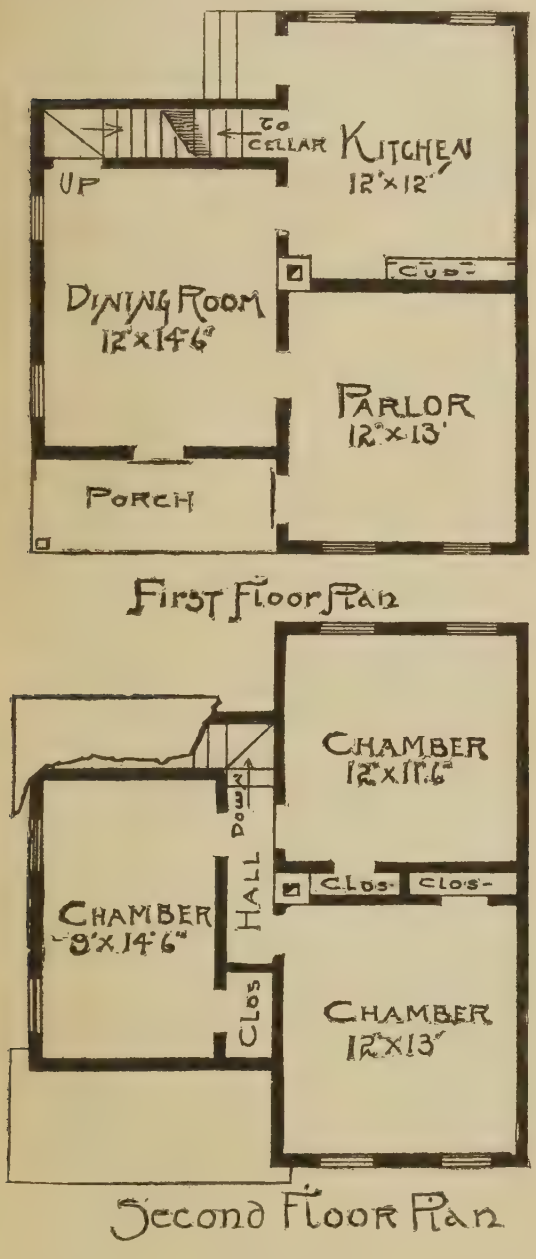
THE MINNEWASKI Blackberry is favorably mentioned, this season, by many who have tested it, for its large size, excellent quality, and great productiveness.

THE GREAT MADRONA.

The following effective description of the Arbutus tree of California, Arbutus Menziesii, will be read with interest:

The genus really belongs to the Old World. Asia has its species, and Mexico claims one or two representatives, but the pride of the family and delight of arboriculturists is the strong, healthy and handsome child of the west coast. It is often eighty to one hundred feet high, three feet in diameter, and a famous specimen in Marin County has a measured girth of twenty-three feet at the branching point of the tremendous stem, with many of the branches three feet through. The foliage is light and airy, the leaves oblong, pale beneath, bright green above. The bloom is in dense racemes of cream-white flowers; the fruit, a dry, orange-colored berry, rough and uninteresting. But the charm of the Madrona, outside of its general appearance, is in its bark—no, it is not a bark, it is a skin, delicate in texture, smooth, and as soft to the touch as the shoulders of an infant. In the strong sunlight of the summer these trees glisten with the rich color of polished cinnamon, and in

the moist shadow of the spring-time they are velvety in combination colors of old gold and sage-green. There is a human pose to the trunk. Seen through the tangle of the thicket, it looks like the brown lithe body of an Indian, and in the moonlight the graceful up-sweep of its



branches is like the careless lifting of a dusky maiden's arms. Every feature of the Madrona is feminine. The trees grow in groves or neighborhoods, and seldom stand in isolation, courtesy to the winds, mock at the dignified Evergreens and Oaks, and with every favorable breeze and opportunity flirt desperately with the mountain Lilacs that toss their purple plumes on the head waters of Los Gatos Creek.

FRED. M. SOMERS, in *Harper's Magazine*.

FUNGI IN FRANCE.

A Bordeaux horticulturist informed the *Revue Horticole*, at the end of August, that the season has been much warmer than the year before, but the storms and local rains have been frequent. Under the influence of this humid temperature, all the Cryptogramic maladies have developed with intensity; happily, the use of the Bordeaux mixture is quite general, and nearly all the vines are green and vigorous. There are fewer grapes than the previous year,. but they will ripen much better, and the quality of the wine will be superior. Tomatoes, which are largely cultivated by the market gardeners, were early attacked by the peronospera infestans. The disease has raged with intensity, and has been terrible in many localities. A good number of market gardeners have employed the Bordeaux mixture, and have arrested the disease, but if the remedy had been applied sooner the invasion would have been completely hindered.

The editor of the *Revue* confirms the above statements by a recital of his observations. Thus, in Central France, all those who have employed the Bordeaux mixture against the destructive Tomato fungus have completety saved the crop, while the others have lost all.

Results absolutely similar have attended the vine. Thus, quite recently, while going about among the vineyards in different parts surrounding Paris, we have been struck with the great difference between the vines treated with the coppery solutions and those which have been left to themselves; while the first are very green, still growing vigorously and carry magnificent clusters, the others are already nearly deprived of leaves, no longer grow and the grapes, poor and mildewy, arrested in their development, are in part shriveled up, and everywhere almost completely destroyed.

These testimonies in regard to the practical application of the Bordeaux mixture and the results of its use are of the highest interest to those of our gardeners and vineyardists who have to contend with the fungi which attack their grapes and tomatoes What have

our own cultivators to say on this subject after this season's trial, and how has the solution affected their fruits?

MOON FLOWER IN CALIFORNIA.

Too much cannot be said in praise of this splendid vine, which is becoming so popular.

When I sent to an eastern greenhouse for half a dozen plants, in the spring of 1888, it was with the idea that the florists' catalogues had exaggerated its merits. The plants came in May, which was very late for this climate, and the aphis devoured three of them before I devised any plan for circumventing them. Sulphur, tobacco water, snuff and insect powder had each been tried in vain, as a fresh army of insects never failed to take the place of the slaughtered hosts. Finally, I tied up the three remaining vines in cheese-cloth bags, and left them there until they began to grow, after which it would have taken a very spry bug to keep up with them.

On the 23d of July the first bloom appeared, charming us all with its beauty, size and fragrance. From that time on, throughout the summer, we never lost an opportunity of watching with eager interest the daily unfolding of these pale beauties. About sundown, or a little earlier, we would take our chairs out in the yard and wait. Soon the long, twisted buds would begin to unfold slowly — faster — quickly, and all in a minute it would be wide awake and smiling a welcome. And such a sweet, delicate fragrance as pervaded the air. One blossom peeping in at my chamber window perfumed the room with just the faintest, most delicate odor. For long before the summer was over the vines had reached the roof, and were beginning to hunt about for more worlds to conquer. We furnished them some strong cords, and they ran over the roof.

When, in the winter, we had a little freezing weather, I expected to lose my vine, but it came out with flying colors, only the tenderest shoots being nipped, and was soon more beautiful than ever, though it did not bloom again until spring. Now, September, 1889, it is a thing of beauty, covering the whole end of the house to a depth of two or three feet, and producing thousands of immense blooms every evening.

The foliage is clean and glossy, otherwise resembling that of the Morning Glory. A peculiarity of the Moon Flower is that the leaves are not uniform in shape, some being deeply lobed. Not the least of its merits is its freedom from worms and other insects. Once started, it will thrive with little attention, though it requires plenty of water, especially until the roots become well established. The main vine becomes strong and well wooded in a few months. I have given plenty of stable manure and some from the chicken house, besides soap-suds and ammonia on wash days.

The plant is easily propagated by layering, and will grow from slips.

F. R. S., *Redlands, California.*

POISONING WITH THE CALLA.

The *Medical Analectic*, of September 19th, gives a case taken from the *Therapeutic Gazette*, of a child being poisoned by eating a portion of the common Calla, or Richardia Africana. It states: "Previous to one clock P. M., same day, the child was perfectly healthy. About that time the mother observed the child walking along the sidewalk in front of the house, chewing the stem of a Calla Lily, which one of the neighbors had thrown out. She took it away, and after giving the child a piece of pie, put it to bed; the child slept until three o'clock, when it woke up with rigors, vomiting, paleness and subsequent lividity of countenance, convulsive movements, and failure of the circulation." By stimulation and use of remedies the child recovered, but afterwards had a high fever, and for several days remained in a critical condition. The Calla, as a house plant, is a universal favorite, and this is the first instance we have heard of poisoning by it. It is well that its properties should be known, and forewarned is forearmed.

MOON FLOWERS.

There are white-seeded Moon Flowers that are immense, and open at four o'clock these days. They will not grow from slip, but the flowers are much larger than the black-seeded, that will root wherever it touches the ground. With me the black-seeded is not so early to bloom, nor are the flowers so large, and unless one is careful to keep all that touches the ground cut off, it will take a

large garden in a few weeks; the fragrance is just the same as that of the white Pond Lily, or Pancratium, that grow so abundantly here.

M. E. C. P., *Baton Rouge, La.*

NEW-COMER FLORISTS.

In this state, at least here in this city, (St. Paul,) the green Swede or Norwegian girl who has just landed, and knows nothing of our language or ways, is called a "new-comer girl," and the lady who takes a new-comer girl into her household to teach her the mysteries of the kitchen knows that it is to be a time of trial for herself, and there must be line upon line, precept upon precept, and upon the new-comer girl's part many blunders and failures, before she can become a success as a house servant. I met a new-comer florist the other day; in fact, am continually meeting them, and they have such a laudable ambition to become experts in the growing of plants, and they have such vague ideas about making a beginning, that I feel it "borne in upon me" to say a few commonplace things, hoping that it may be a help to our new-comer friends.

This lady said to me: "Oh, I do hope I shall have good luck with my plants, for I have invested quite a good deal in pots." This moved me to say, "don't spend your money for that which satisfieth not; if you really have a love for flowers and for their cultivation, you will need all your money to invest in the tempting things spread out before you in florists' catalogues, and your choice plant will do just as well in a discarded tin pint can, with the top that has been cut to take out the fruit melted off on a hot stove, and then painted some dull color, (don't paint it bright red—unless you want to.) I have a choice collection of plants, and many of them, even quite large plants, are in cans holding a quart. I have been to a paint shop with one of those same cans, to bring it home in, and bought ten cents worth of paint, also bought a little brush for the same amount, and lo, am ready to make two or three dozen, or more, cans into things of service, if not of beauty, and the things of beauty that they will contain will make one forget to notice the can. Then if the new-comer florist has not much money, I think almost every one who has a collection of plants will be glad to give slips from them. I am sure it is a pleasure to me. So, there are many things to encourage the new beginner—small expense, prospect of success with patience and perseverance, and the great pleasure of watching development.

I will just describe the prettiest hanging basket that I have in my conservatory, and all may have one as pretty: The basket itself is an old granite-ware stew-pan, worn through, and which had been thrown away; it was picked up and made to look well by painting; it holds six quarts. After filling it nearly full of soil from the woods I set a tin can with a beautiful Coleus into it, in the center, then filled around it with soil, and then planted all around the can, hiding it completely, the following named plants: An Ivy Geranium, a Nierembergia, a dwarf single Petunia, white Alyssum, blue Lobelia, and a Maurandya vine. The latter twines around the wires by which the kettle is suspended, and also vies with the other things in hiding the old kettle from the public gaze.

You will see my refrain is mostly can, can, and the echo, you can can.

M. P.

CENTRAL PARK.

If there ever has been any serious purpose to use a portion of Central Park for the Exposition of 1892, and probably there has been, if we may jndge from the opposition that has been awakened, it has, no doubt, by this time been turned aside. There could be no greater piece of vandalism than its use in such a manner. *Garden and Forest* gives Mr. OLMSTED'S protest against it, and also that of Mr. RUSSELL THAYER, who was Chief Engineer and Superintendent of Fairmount Park, of Philadelphia, at the time of the Centennial Exposition there. It also, among other things, has this to say in an article entitled, "A Crisis in the History of Central Park:"

"The Park is still young, but it has taken thirty years to grow into the beauty which now invests it, and a generation would be needed to restore it after the Exposition converted it into a desert. Oaks and Hickories, Chestnuts and Beeches, like those which were growing in the natural wood before the Park was planned, can be replaced only after years of patient waiting. But what ground is there for hope that any reso-

lute effort would be made to restore the Park. If there is not enough public spirit in the city to preserve it now, when in the prime and freshness of its beauty, what encouragement would there be to begin over again, with the very surface of the ground scarified and blasted, until not one of its original features could be recognized? Even if any attempt at restoration were made it would soon be abandoned for some new invasion, because the clamor for space to be used for one purpose or another will grow louder as the population becomes more dense. The probabilities are that if the Park is thrown open to this celebration, it will be left an entirely different and inferior work, and that its most impressive landscape features will be obliterated forever."

It cannot be possible that the citizens of New York will ever allow the Park grounds to be used in the manner proposed, or in any other way than that to which they are now devoted. As one of the most beautiful features it should be jealously guarded and improved, and transmitted to coming generations in continuously growing beauty.

EASILY GROWN PLANTS.

There are many persons to whom the care of their house plants is a pleasure rather than a task, for whom every thing grows and blossoms, who have full knowledge of the whims and peculiarities of the different plants, and know just how to keep clear of insect pests. These fortunate flower lovers could no more restrict themselves to half a dozen varieties of flowers than they could fly, nor should they. But all who love flowers are not so situated. Some, perhaps, have only room for a small stand of flowers, and from necessity their choice must be restricted to a select few. Others of limited strength, and having large households to look after, must spend more time darning socks, or washing children's faces than in training vines or petting notional plants. Others, again, have plenty of room and time, but belong to that large class with which failure is more common than success, through utter inexperience.

For the benefit of these last three, I give a list of half a dozen species of house plants, which, if once given good soil and thereafter watered regularly, will grow without fussing or fretting, will not be troubled by insects and will each bloom from eight to twelve months out of the year. Of course, such an abbreviated list will cut off many good sorts, such as Fuchsias and Heliotropes, which sometimes are too "fussy" for beginners, as well as the class, such as Chrysanthemums and Holland bulbs, which, while most beautiful and little trouble, yet give but a few week's bloom in a year.

If the room is a warm one, I should give the place of honor to the Begonia—not the tuberous sorts for summer bedding, nor yet the Rex varieties, raised for their foliage—but the few ever-blooming sorts, which any reliable florist will select, if requested to do so. The Begonia only asks to be kept warm, and it will bloom where you place it, be it in sun or shade. They are good growers, have handsome foliage, and panicles of lovely waxen flowers, white, pink, or red in color, and the same plant blooms for years. The very best Begonia of all is B. rubra, whose tall growth and wax-like leaves form a most effective background for the immense drooping sprays of coral-red flowers. A good plant of B. rubra will, for years, never be without blooms. Even in decidedly cool rooms, if but well protected at night, it will bloom without cessation throughout the coldest weather.

The Primula, or Primrose, is next on my list. It does not bloom generally in hot weather, and after flowering the old plants are worthless, but it is simply indispensable in the dull, cloudy days of winter, when so few plants will bloom. All fall, winter and spring it is one mass of bloom, and will blossom even in a shady place. If the room is a very warm one, give it the coolest place, and see that the dirt is lower at the edge of the pot than in the middle, as water standing around the crowns of the plant rots the flower buds.

My next two favorites are the Abutilon and the Achania, which as they strongly resemble each other in bloom and habit, I will consider together. While not showing such a mass of bloom as some plants, they are always in bloom the year round, and being hard-wooded, the same plants lasts for years. They will stand almost any abuse. Cold or hot, sun or shade, they blossom right along. Their only fault is a tendency to run up

too slender and tall, but if the top shoot is pinched back when small, they will bush out at once, and bloom much more abundantly.

Then comes the Carnation, easily raised and cared for. Like the Primula, new plants of it should be rooted or purchased each spring, as an old plant that has bloomed eight or nine months is too much exhausted to bloom the second winter. For a cool room the Carnation will always be a favorite winter bloomer, being so profuse and sweet.

Last of all, I name the Geranium, which is too well known to need description. Most people think this the best bloomer of all, but I do not, for this reason: those who raise but few flowers want them most of all in the dead, cheerless winter, and of the six sorts of flowers here mentioned, the Geranium is the poorest midwinter bloomer. Nothing can surpass it nine or ten months of the year for bloom, but my experience is that four out of every five Geraniums provokingly take a rest spell in winter, and even the good bloomers will not open their buds, no matter how nearly expanded, without sunshine, so they must be given the sunny places on shelf or stand.

I hope this list of tried and true everyday bloomers may help some poor soul, who would gladly spend a few moments of her precious time each day for the pleasure of seeing and smelling sweet flowers, but who has no time or strength to spend on uncertain favorites or untried novelties. L. S. L. M.

A SEEDLING ROSE.

Last year, the third of its growth, there bloomed in the garden of a friend a supposed Seedling Rose, which came up near Mme. Plantier. It bore resemblance to the old-fashioned Damask Rose in the texture of its petals and its glossy foliage, though the latter was much finer than any among its numerous neighbors. Like our native roses, were the red woody stems, the exquisite shading of the petals, of which there were *two* rows, and the stamens. With its beautiful buds and its wonderfully prolific bloom, it made a very attractive specimen.

It has suggested inquiry in my mind as to whether intelligent effort, based upon our native Rose, might not give us in time a set of choice "iron-clad" varieties of Roses. We have every shading, from white to deepest pink, and once, in childhood, I saw one of deep dark red. There is a decided tendency to the ever-blooming types; while there is no place so barren or rich, so sunny or shaded, or damp, where we may not be greeted by the welcome sweetness of our own wild Rose.

F. F. L. D., *Durand, Wis.*

NAMING VEGETABLES.

The Department of Agriculture has issued a report of the committee on nomenclature of vegetables appointed at a meeting of Experiment Station horticulturists, at Columbus, Ohio, in June last. The report and the rules which they offer are here presented:

REPORT OF COMMITTEE.

The committee believe that all interests will be subserved and that dignity will be secured by simplicity and good taste in the nomenclature of kitchen garden vegetables. To this end they have formulated a series of rules on the naming of vegetables, by authority from the Convention of Horticulturists of the Experiment Stations, held in Columbus, Ohio, on the 13th and 14th of June last.

Reform in this department of horticultural nomenclature should be prosecuted as vigorously and successfully as it has been in the nomenclature of fruits at the hands of the American Pomological Society. The committee are confident that brevity, accuracy and good taste in the naming of vegetables are perfectly compatible with the purposes of trade, and therefore solicit co-operation in this work not only from all writers upon horticultural topics but from all dealers in garden seeds and supplies.

A name is bestowed upon any plant solely for the purpose of designating it; it is not the province of a name to describe the plant. All description is properly a part of the text. This description should present a characterization of the variety, rather than a mere list of adjectives intended to catch the eye. The committee desire to suggest that a variety never be described under a name which is accepted as a synonym; if the synonym is used as a leader, it should stand only for the purpose of making a reference to the proper name; as Ivory Ball. See White Apple.

L. H. Bailey, E. S. Goff, W. J. Green.

RULES.

1. The name of a variety should consist of a single word, or, at most, of two words. A phrase, descriptive or otherwise, is never allowable; as, Pride of Italy, King of Mammoths, Earliest of All.

2. The name should not be superlative or bombastic. In particular, all such epithets as New, Large, Giant, Fine, Selected, Improved, and the like should be omitted. If the grower or dealer has a superior stock of a variety, the fact should be stated in the description immediately

after the name, rather than as a part of the name itself; as, "Trophy, selected stock."

3. If a grower or dealer has procured a new select strain of a well known variety, it shall be legitimate for him to use his own name in connection with the established name of the variety; as, Smith's Winningstadt, Jones' Cardinal.

4. When personal names are given to varieties, titles should be omitted; as, Major, General, Queen.

5. The term *hybrid** should not be used, except in those rare instances in which the variety is known to be of hybrid origin.

6. The originator has the prior right to name the variety; but the oldest name which conforms to these rules should be adopted.

7. This committee reserve the right, in their own publications, to revise objectionable names in conformity with these rules.

* A *hybrid* is the product of true species. There are few, if any, instances of true hybrids among common garden vegetables. The union of varieties gives rise to a *cross*.

GLOXINIAS.

I received a package of Gloxinia seed last spring, and must confess I had very little faith in my ability to raise even one plant from such tiny seed. I did not want to fail alone, so gave half, as nearly as I could divide them, to a friend, and gave two other friends a few from the half package I kept for myself. I have seventy Gloxinia plants from the seed I sowed. My method was as follows: I took an unglazed five-inch flower pot, put some bits of broken crockery in the bottom for drainage, on that a little hen manure, then a layer of leaf-mold, filling the pot with finely pulverized garden soil with which was mixed a very little fine sand. I moistened the whole and sprinkled my seed as evenly as possible over the surface. Sifted a very slight covering of the finely pulverized earth over the seeds. Wrung a flannel from warm water and tucked it snugly down on the seeds. By carefully dropping or spraying slightly warmed water on the flannel the seeds would be kept moist without danger of being washed out of the earth, or dried up for the want of a little water. As soon as the tiny plants broke ground (I used a magnifying glass to see them, for they were not discernable to the naked eye) I removed the flannel.

I kept the pot in an earthen bowl in which I kept water enough to keep the soil and plants as moist as they need be, for the tiny plants were in as much danger of being washed out as were the seed. When the plants had six or eight leaves I transplanted to small pots and cans, some four or five to each can or pot. Transplanted again to larger pots, and soon shall gradually withhold water till the plants apparently die. Shall then put them where they will be dry and out of all danger of frost.

The old-fashioned brick oven, if one is the possessor of such a rarity, is an excellent place for keeping plants. In the spring shall repot in rich soil and water sparingly till growth begins, being careful at all times not to wet the crown of the plant or the flower buds when they appear, as it takes but little water, if applied to the plant itself, to rot it.

The best way to water Gloxinias is to pour water into the saucers of the pots frequently enough to keep the soil moist. Or, if a porous pot, plunge nearly to the brim in a bowl of slightly warmed water, letting it remain till the earth in the pot is well moistened, repeating the operation as often as the plant gets dry.

DOROTHY LINCOLN.

THE WATER CRESS.

Within a few rods of my door runs a purling brook, where the green Water Cresses play hide and seek with the bright mosses upon its bed. I understand that these are quite rare, except in cultivation, and for that reason I prize more highly the pretty runaways, often wondering where they came from, and wishing that I might trace their course back to their far away starting point.

The Water Cress belongs to the order Cruciferæ, genus Nasturtium. The Nasturtium officinale is regarded as the true or English Water Cress. As its name implies, it is a native of England, but through cultivation has become naturalized in America.

The stems are thick and bend downward, sending out tiny roots along their entire length. The leaves are pinnate, with ovate, sub-cordate leaflets, three to

seven in number, the terminal one much the largest. The plant bears a corymb of white flowers with petals much longer than the calyx. It has a seed-pod barely one inch in length. Many varieties belonging to this genus have yellow or greenish-yellow flowers, among which are the Wood Cress, Tansy-leaved Cress and Marsh Cress, the latter differing essentially from the true water Cress.

It is said that N. officinale possesses qualities which fit it for both food and medicine. It contains a bitter extract, phosphate and other salts, sulpho-nitrogenous essential oil, and so forth. When the plant is in flower the medical properties which it contains are more abundant, the essential oil being increased by the amount of sunshine the plant obtains, and the quantity of lime by the richness of the water in which it grows. As food it should be eaten in an uncooked state. As medicine it is said to be useful in indigestion, scurvy and scrofula.

S. E. K., *Moosup Valley R. I.*

PLANT NOTES.

I find the brush-broom of great value as a sprinkler of plants as well as of clothes, and, if slugs are about, a little sulphur added to the water does no harm, at least. I like to lay my plants in a sink or on the floor, and give them a good bath, a little dexterous brushing before applying water is useful, and will keep off the aphis and slugs. Always make a practice of placing a paper under the plant troubled with aphis, so that it may be gathered up and burned, thus making sure of your work. The sooner insects are destroyed the less work it takes, and the finer the growth of plants. Never deluge your plants, they will thrive better rather dry than too wet, and as most leaves are refreshed by the dew, a sprinkling is of great value to them, especially if they are not placed in the sun until nearly or quite dry.

Many amateurs fail with plants, unless we can except the Geranium, by exposure of the pots to the hot sun. The plants love the sun, but nature hid them in the earth to screen them from its rays. A plant with baked earth is not a beauty, but an eye-sore. If no prettier screen can be afforded, cut up some stout paper a little larger than your pots, and slip it around them. I have found a light spread of moss a good protection, also as a surface protector in very hot weather; the water evaporating less rapidly, and the roots are not exposed to such sudden changes. Larger pots may be used as a screen, and filled with damp moss.

MRS. H.

PLANTS DEMAND WATER.

EDMUND P. KIRBY, in an address read before the Market Gardeners, of Boston showed the paramount importance of irrigation by many direct proofs. He first alluded to the increasing scarcity of water, as shown by the failure of dams and water privileges all about the cleared country to do the work they formerly did; then to the fact that four hundred parts of water must pass through plants in general for every one part of dry matter fixed, and that as much as three pounds of water passes through one Cabbage plant in one day of twenty-four hours, if there is moisture enough in the soil and growth is free.

W.

VICK'S MAGAZINE FOR 1890.

One more number completes the twelfth volume of this MAGAZINE. We trust that as many of our friends as can, that have not already notified us to this effect, will send in their names and act as agents in their own neighborhoods to obtain subscribers for the next volume. A page in the Publisher's Department, and notices in these columns in previous numbers, have explained in regard to the Illustrated Poem, "Myself," which we have prepared for each subscriber. By writing to us for terms of agency, full particulars can be learned. We want an active agent at every Post Office, and the inducements offered are such that many would gladly avail themselves of this opportunity for profitable work if they understood it. Those who are willing to canvass should send in their names as early as possible, and state what territory they wish to operate in, and learn all our terms and inducements. Write at once.

WESTERN grape-growers say that the Baltimore Oriole is particularly mischievous and destructive in vineyards, pecking and sucking the fruit, and after he has had his fill still pecking the berries, apparently for the fun of it.

SELF-BLANCHING CELERY.

The Dwarf Golden Self-Blanching Celery has sustained its high reputation this year as a valuable acquisition for the market garden. Compared with the White Plume, good judges give it the preference on account of its more perfect blanching character, firm but crisp stalks, and of a peculiarly pure, nutty flavor. Its appearance is very beautiful, being short and stocky, the stalks very uniform in size, and of a rich yellowish tinge. We can recommend it without hesitation.

DWARF GOLDEN SELF-BLANCHING CELERY.

BINDING THE MAGAZINE.

We will bind the MAGAZINE in nice cloth covers, for any subscriber, for 50 cents, and return the book, with the postage or expressage prepaid by us. If subscribers will send us the eleven numbers in season, we will add the December number and have the volume bound and returned, if possible, before the Christmas holidays. Please give your name on the package when sent, so that we may know to whom it belongs.

INDIAN POSY.

In his article on "Meadow Sod," in the October number of the MAGAZINE, Mr. E. S. GILBERT, of Canaseraga, N. Y., mentions the plant Antennaria margaritacea, R. BR., and calls it "Moonshine," and "Injun Posy." In this locality—eastern Long Island—the plant known by the name "Injun Posy," or "Indian Posy," is the Gnaphalium polycephalum, of MICHAUX, one of the Cudweeds, which, according to GRAY, is called "Common Everlasting," and, according to TORREY, "Life Everlasting," and "Balsam."

It would be interesting to learn by what common names these two plants are known in other localities, and which is the better entitled to the appellation "Indian Posy."

F. N. TILLINGHAST, *Greenport, L. I.*

THE FIRST FROST.—Only a slight hoar frost, the first of the season, was seen on the morning of October 16th. The first half of October the temperature here has been below the average.

HIGH-COLORED FOLIAGE.

A paper entitled "Landscape Gardening in High-Colored Foliage," by WILLIAM MCMILLAN, Superintendent of the Buffalo Parks, read at the recent meeting of the Society of American Florists, was heard with great interest, and has occasioned much comment. There is so much that is good in it that we wish to lay it in full before our readers, but can find space for only a portion of it in this number. It will be concluded in our next issue, when we shall, also, have some remarks to make on its contents. Here follows the paper:

Landscape gardening is a subject that embraces a very wide field, only a small corner of which is occupied by the florist. An ornamental landscape is not merely a composition of choice trees, shrubs, grass and flowers, but includes as well every inorganic element of nature embodied in the scene. The "lay of the land"—to use a familiar phrase—is in a double sense the ground work of the composition. This includes every form or feature which the earth's surface presents to us, from the flat plain to the beetling cliff, every variety of hill and vale, ridge or dell, bare rock, sterile sand, or rich soil; and also water, flowing or still, of whatever volume, large or small. Even the atmosphere must be included as a part of every landscape, for the scene varies with every variation of sunshine or shade, dim haze or clear sky, still air or stirring breeze. The lights and shades of a landscape painting are carefully studied, and whatever is appreciated in the copy is surely of greater value in the original.

In the embellishment, then, of any grounds of sufficient extent to have a distinctive landscape character, the gardener must take into account all the impressive and attractive natural elements of the place. The general aim of his work will be to make an harmonious combination with the dominant characteristics which nature has already stamped upon the site. He will seek a fuller or richer development of the essential leading features, simply softening what is hard, clothing what is bare, filling out what is meager, and enriching what is beautiful, all in harmony with the original type. He will thus avoid all novel conceits, all conspicuous eccentricities, all incongruous intrusions, and be guided by his understanding of the laws of nature, as enacted by the ruling divinity of the scene, and his sympathy with them.

I lay special stress on this fundamental principle, because it seems to be so commonly overlooked or ignored in ordinary landscape gardening. In fact, the very opposite rule is followed in much work that is done, and the result receives much popular approval. It is a common thing to value the decorative work on any given site in general proportion to the degree in which it is obviously artificial, new or peculiar. This unfortunate fashion seems to pervade every branch of landscape work. Instead of the artificial being subordinated to the natural, it is made specially prominent, and in some cases it even becomes the "be all and end all" of the scene. For instance, drives and walks are made unnecessarily broad, or sinuous, or prominent, or intrude where not needed. A sharp terrace is formed mainly to display its bold lines, or a channel is dug for an artificial runnel, to give occasion for introducing a bridge. Summer houses, arbors, rockeries, pools, fountain-basins and jets (usually dry), clumps of trees and shrubs, or beds of flowers and foliage plants are stuck around promiscuously in conspicuous sites, without any fitting relation to the natural conditions of the landscape.

A common phase of the same taste is shown in the popularity of the class of plants which propagators call "sports." This includes that numerous list which pads out the pages of most catalogues, the endless varieties with the leaves abnormally shaped or colored, or with a drooping or contorted or dwarfed habit of growth. Very few of the plants of this class are as hardy, vigorous and healthy as the normal type. It is probable that their peculiarities in color or habit are due to some unhealthy condition of the sap or defect in the channels of circulation. But in spite of this relatively weak growth, sickly color or deformed shape they are all popular favorites. The paler and feebler and more distorted the growth the more they are liked and petted and pampered. A few of the best of this class may be sparingly planted as foils or specimens or curiosities merely, but never in proportions to rival those of the true type of each species. For general use the natural color and shape are more pleasing and satisfactory, not only because more vigorous and durable, but also because they are in accord with the true order of nature, while the others are not. Nature, in fact, disowns her "freaks" of this sort by the general sterility of such offspring. Their reproduction depends wholly on artificial propagation. It were better to let them all die a natural death than to treat them as if they were nature's finest productions. Her sanction to their continued existence is given only when the seed, if produced at all, is true to the parent.

The variation of plants under domestication is no doubt a part of the true economy of nature. When the offspring is equally healthy, hardy and comely as the parent or type, the propagation of the new forms may be desirable. But why should we rescue from their natural fate of extinction so many variations that have defective vitality or some constitutional deformity. For example, most of our so-called "weeping" trees are of this class. In the Weeping Willow, White Birch, and others, where the young twigs are long and slender, the pendent spray is natural and pleasing to the eye. But where the downward growth is apparently due to some constitutional kink, as in the Weeping Ash or Mountain Ash, the general aspect of the tree gives a painful impression that it is making a prolonged effort to recover from some crushing accident. A similar unpleasant feeling is aroused at seeing the healthy green, so natural to all foliage in the growing state, becoming blanched with white, jaundiced with yellow or livid with purple. It is fortunate that plants, notwithstanding much cruel treatment by cultivators, never become subject to "fits of the blues." If by some violent medication or heroic surgery our "professors of plant propagation" could produce blue leaves their triumph would be complete, and the new color in foliage would at once lead all the rest in popular favor.

The prevalent fashion of using plants with leaves of unnatural hues is most strongly shown in the rapid rise and wide extension of this practice for decorative work in gardens and lawns. "Carpet bedding" and "ribbon gardening" have become an important branch of the gardener's work, and even of the florist's. The trade of the commercial florist

in foliage plants is probably greater than in plants grown for the flower garden. Though this a society of florists, it is quite probable that their interest in landscape gardening is due more to this class of foliage plants than to old-fashioned garden flowers. The proper fitting and furnishing of the flower garden or rather the new foliage garden and its relation to adjacent grounds are therefore to you the most important parts of my subject.

What then are the ruling principles which should govern in the decorative work of a garden? In this as in all other things there can be no absolute standard of taste. Personal preferences will vary as the early associations and later education of each individual may vary. But good taste has certain recognized canons by which it may, in a general way, be judged. There are some fundamental principles accepted by the common consent of the community because in accordance with common sense. On strictly private estates where chiefly the eye of the owner is to be gratified he may ride to his heart's content any hobby that may please him. But in places exposed largely to the public eye, as in ordinary villa grounds, suburban gardens and public parks, it is well to have some respect for long established usage, and conform more or less to the general customs of the time and place. Novel ideas will be introduced modestly and not generally adopted till they have stood the test of the fullest criticism. This means more than the ready applause of the populace, which daring novelty is sure to elicit; more than the hot-bed stimulus of a fleeting fashion, however popular for a time. Some of these leading principles which should guide the landscape gardener may here be briefly stated.

Flowers and showy foliage being professedly used for ornament, should, of course, occupy the choicest site of the home grounds. The work being necessarily formal and artificial, there will be no incongruity in the close proximity of rigid lines; and the dwelling house may be as near as will best suit the general convenience in the use and enjoyment of the garden. The nature and extent of the collection will, of course, vary with the taste and means of the owner. The finer the design and the greater the variety of plants the better, so long as there is ample room for all in fitting proportion to the intrinsic merits of each kind, and to the general plan of the whole garden. It is well not to make any ambitious or pretentious display unless it can be easily and willingly kept in perfect order at all times. The immediate setting or surrounding of the garden should be in keeping with the central design. It is poor taste to make a gaudy show of fine flowers or bright foliage if adjacent grounds are weedy and seedy. It is equally bad taste to intrude such plants in formal masses into outlying portions of the grounds mainly devoted to other uses. Even on the ordinary lawn the quiet repose of the green sward may be disturbed by some mass of high colors. The discord is equally great when formal beds of like character are scattered along the lawn border amid irregular groups of shrubbery. This incongruity lasts the year round, for after the tender exotics die or are removed, the bald plots look equally foreign to turf and coppice. A lawn is one thing, a flower garden another. Grass has recently supplanted gravel in the garden, thanks to the lawn mower. But only in city lots can the plants be properly in such relative proportions to the turf as to convey the idea of both garden and lawn.

In furnishing the flower garden the selection of plants has radically changed with the introduction of "carpet bedding." Old-fashioned flowers are now at a discount, and in fact all kinds of flowers unless the color be intense, or strongly variegated or blotched. Delicate tints and shadings or fine perfume are of little account. What is wanted is color only, and color that will strike the eye a long way off, and even then it must be set in large masses to have the much desired effect. Quantity, brilliancy, oddity, novelty are the chief attractions. The individual plant is nothing, the effect in mass or in combination is everything. In foliage plants high color, strong contrast and fanciful figures in design receive the most favor. The individuals are ruthlessly snubbed and pinched to hide the true character of the plant and show forth the art of the planter.

Is this new fashion better than the old? Formerly flowers were cultivated solely for their individual qualities. Delicacy of tints and lines was more valued than strong color, and fine perfume more than either. Our regard for them was in direct proportion to our knowledg of the finer traits of character, gained only by intimate acquaintance with their daily behavior under all circumstances. Our love was for the individual plants rather than for the general assemblage—for the features revealed by close acquaintance, not merely the strong lines seen from afar. It was won by the true test of long familiarity instead of "at first sight" by fascinating novelty.

The general aspect of mixed borders of bulbs, annuals, perennials and sweet smelling herbs, or of miscellaneous collections of favorite flowers in rectangular panels, was not so neat and trim as clipped beds of fancy forms on shaven lawns; but all the season through, from the first Snowdrop to the latest Aster, each day brought another flower into bloom, and an ever-changing phase in the annual growth of each plant to maturity. Our chief foliage plants in this latitude do not last quite four months, and their general aspect is the same from the first day to the last, except only in the density of the foliage, or a slight increase of color. Color apart, a bed of pot herbs has less sameness throughout the season, while the fragrance their leaves exhale is a constant source of pleasure more refined than can be given through the eye by any variegated leaves, however finely veined, stained, mottled, spotted or splashed. To the true lover of flowers high color, either in leaf or blossom, is but one of many points of interest. The habit of growth from the swelling bud to the fading leaf may be a greater source of enjoyment, or the fragrance of the bloom may be the chief attraction, as in Sweet Alyssum, Mignonette, Heliotrope, Violet and Lily of the Valley.

Where the interest lies chiefly in the foliage, such bedding plants as give a tropical luxuriance of growth are surely a finer sight than any mixture of the carpet bedding class. Various kinds of Canna, Caladium, Aralia and Castor Oil Plant are commonly used in such beds, but there are many others of like character. Their rapid growth and great size at maturity give a sub-tropical aspect to the group. Some of the sedges and grasses of warm climates are especially beautiful and effective for this purpose. Some plants of this class have a striped variegation with a truly natural look and much real beauty. It may have originated as a sport, but when it has long been known it conveys no hint of being odd or ephemeral. The Eulalia, Striped Maize, and even the old-fashioned Gardener's Garter, are well known examples.

If variety, richness and contrast of color be the chief aim of the florist, why should he seek it in leaves of plants, beyond the natural range from the lightest gray to the darkest green which nature spon-

taneously exhibits. The shades of green are so infinite that no two species of plants have exactly the same hue, and the manner in which these mingle and blend in any natural landscape, if closely studied and copied, will give more real pleasure than the highest art in arabesque designs in white, yellow and red. If all the colors of the rainbow be wanted in a group, they may be furnished in flowers. Every shade imaginable may be matched by some plant. But the taste is surely morbid that would seek to combine in one group any greater variety of tint than may be furnished in many cases by a single genus, as in the Tulip, Hyacinth, Phlox, Dahlia, Hollyhock or Columbine. Yet the hunt for a blue Dahlia or Hollyhock, a yellow Aster or Verbena, is still kept up, and is akin in spirit to that in which some new mixture of white, yellow and red in the leaf is sought after. The whole work is false to nature, and the foreign color due to disease or distress rather than "sport."

WINEKIN.

In regard to this new beverage, the unfermented juice of the Grape, the *Pacific Rural Press* has the following to say:

The opinion has been expressed that unfermented Grape juice will become in America one of our most important and healthful beverages; considering this, the following extracts from a discussion at the last Viticultural Convention will be of interest.

The statement was made and corroborated that in New York, Chicago, and San Francisco, Grape must was eagerly purchased whenever placed on sale, and the supply had never been equal to the demand.

So far nearly all of the samples of marketed Grape must that had been examined, contained salicylic acid, or some equally deleterious chemical, which, though arresting fermentation, at the same time arrests digestion, and as far as possible samples have been examined of all unfermented wines sold for communion purposes, and there was not one but contained some poisonous chemical, and the churches were warned against these vile impositions.

One way to get the pure article is by reducing the fresh juice to a syrup, which will keep without trouble, and water can be added to suit the taste when it is required. Another way is to boil the juice and bottle when hot; but perhaps the best plan when it is practical, is to express the juice from thoroughly ripe selected grapes, put it in cold storage until it has thoroughly settled, rack off and put in bottles, pasteurize by heating to a temperature of 160 degrees, cork tightly, and you have a well colored, pure, unfermented wine. The cold storage process takes away the muddy look of the must and gives it a better flavor.

THE DIAMOND GRAPE.

Mr. Geo. W. Campbell, in his paper before the American Nurserymen's Association, given in full in our August issue, page 254, in comparing the Diamond Grape with the Empire State, says the bunches and berries are somewhat smaller.

In this Mr. C.'s statement is incorrect. We grow them side by side and have had fine specimens of each; the Diamond is larger both in berry and cluster, and far handsomer. The colored plate in our April number is an excellent representation of the Diamond, though it often appears with two large shoulders; imagine another shoulder opposite, on the colored plate, and a good idea will be formed of the Diamond as it often appears. It may be that the specimens seen by Mr. C. were produced on young vines, and were not of normal size.

A Large Grape Vine.—Carpenteria, California, has a Grape vine of the Mission variety, which has a girth of six feet at its base, and at the height of six feet branches out in every direction for a hundred feet. It was planted forty-seven years ago by a Spanish girl, Miss Crescncium Ayala. This season its product is estimated at four tons.

LOST NUMBERS.

One number more completes the volume for 1889. If any number has failed to reach any subscriber during the year, and the volume is thus incomplete, please send us a postal card, stating what number you need, and it shall be forwarded.

Henry Shaw, the founder of the Botanic Gardens of St. Louis, died in that city at an advanced age, on the 25th of August. He has been influential for the past fifty years in the advancement of horticulture in Missouri.

CLOTH COVERS FOR MAGAZINE.

We will furnish elegant cloth covers for the Magazine to our subscribers for 25 cents each, and prepay postage. Any bookbinder can put on these covers at a trifling expense.

OUR YOUNG PEOPLE.

HEIRLOOMS OF TALE AND ANECDOTE.

The next we know of Clarence and Kathleen they have captured Grandmamma Raymond in a corner near her favorite window, and are building a bower behind and over her, of tall branches of Dogwood, covered with their gaily colored leaves and laden with clusters of scarlet berries just brought from the woods.

On the floor are arm-loads of wild Asters, purple and yellow, "Black-eyed Susans," and Goldenrod, which are soon placed in jars and tall vases on floor and mantel. Two varieties of Solomon's Seal, with their heavy branches of black berries and of mottled silver-gray ones, garnish a bracket made graceful by trailing wild vines.

Mamma is then brought in to see this bit of the autumn woods and the display of field and wayside flowers, and lingers long in admiration, the while her children notice that her eyes grow moist as she tenderly touches these uncultured beauties of nature, which bring back to her former associations.

And now some note-books and pencils are whisked out of their hiding places, and two low seats are placed in front of Mrs. Raymond, to which she smilingly assents, remarking:

"I was recalling, to-day, some oddly worded love-letters, so called, that we used to coax our mothers to repeat for the amusement of our young friends, until I, myself, had caught the lingo. After repeating them to you, I will dictate them, word by word, for you to copy. Of course, the gentleman's letter must come first:

"'*Madam:* Most worthy of estimation, after long observation and due deliberation, I make a declaration in much humiliation, and confess with trepidation that your rare fascination inspires an inclination to become your relation.

"'Your slightest intimation that such an innovation would meet your approbation, and prove a temptation worthy of acceptation, would be an aggrandization beyond all calculation of the joy and exultation of Yours.'"

"Whew!" puffs Clarence, "he must have had t-i-o-n on the brain."

"Wait till you hear the answer," says Grandmamma:

"'*Sir:* I received your oblation with some consternation at the great infatuation of your strong imagination to show such adulation on so slight a foundation.

"'But, after contemplation, I supposed your animation was the fruit of recreation, or had sprung from ostentation to display your education by an odd enumeration, or rather multiplication, of words of the same termination in each variation of their respective signification.

"'But further meditation proved your exoneration from such an accusation, or rather implication, and demanded reparation.

"'So, without prevarication or further explanation, I'll admit the elevation that your great reputation has secured in the nation, and will share your high station.

"'Thinking imitation without recapitulation a sufficient gratification, I am, without hesitation, Yours.'"

"What curious compositions they are," says Kathleen, at the conclusion; "her letter quite throws his into the shade. I wish we could know where our great-grandmother found them. Tell us something else you got from her. We'll write out these letters some other time."

"I want to tell you next, something that my husband's mother—your father's paternal grandmother—told me when I was young. Though I once told it elsewhere, knowing it was to be printed, yet I wish you to have it now from my own lips. Something you said, yesterday, Kathleen, revealing your pride of ancestry, reminded me of it.

"'The old lady's early life was spent in the south, and she said that on one occasion when she was congratulating herself on the patrician character of both sides of her family, at the same time thanking her grandmother for having

transmitted so much 'blue blood' as a dowry from her own ancestors, that lady suddenly checked her remarks on the subject by asking her to sit down a moment and listen.

"'"When I was young,"' she said, '"I was going on as you have been doing now, and was told to be careful, for if I were to trace the Raymonds back to their English progenitors I'd come to a man, who, in trimming a tree, had set astride of a limb on the wrong side of the saw and had sawed himself off into a well below and was drowned.

"'"I was dreadfully shocked at a revelation that implied not only poverty of purse, but of intellect *in a Raymond.* Then, suddenly, I thanked my stars that the fool had been drowned and could not perpetuate his idiocy, but was informed that he had left three sons, from one of whom our branch of the Raymonds had descended.

"'"I was angered and chagrined that I had been told such a story—I did not want to know it, and said so. Then I was kindly informed that it had been told to me for my own good—that I had plumed myself too much upon a condition of things that no merit of mine had brought about; also, that there was danger of silly young heads resting solely upon family prestige until, when they should come to fill responsible places, they would lack the sterling qualities necessary to sustain the elevated position of their ancestors, or to retain their inheritance."'"

Hereupon Clarence exclaimed: "An idea has occurred to me, Grandmamma—it was a vein of good hard sense, like that of the old lady's, that built up the Raymond family, wasn't it?"

"Without a good portion of that, surely no family can amount to much. *Really* good, common sense—comprehensive, outreaching, includes strict rectitude of life, kindness and gentleness toward all. With these qualities steadily transmitted from father to son, a family name and reputation are sure to become established without personal scheming or forethought. It is said, Clarence, that a conscientious observance of the Golden Rule by any man will make of him a gentleman.

"It lies within you and your sister to do your part in life toward keeping up the family reputation. Remember, when you come to establish homes of your own, that an improper alliance may serve to break down, instead of building up, the Raymonds—which process, if continued, would soon get them back to the man of the saw."

"Disgusting!" exclaimed Kathleen; "I'm very, very thankful you hit upon this subject, for you've given me some new ideas."

"You don't think, Grandmamma," asks Clarence, "that wealth alone can insure family position, or give a man an enviable reputation?"

"No, indeed; wealth gives prominence to its possessor, and prominence makes his faults and short-comings stand out more glaringly. This reminds me of a Mr. D——, of whom my father used to speak. He was very wealthy for those times, but his wealth gained him no respect. One of his possessions was a large dairy farm, upon which he lived. His case, Kathleen, is another instance of the 'breaking-in' of wives. His first wife soon lost her health from over-work, but when Sunday came she had to go to meetin', whether sick or well. Once when really bed-fast, he told her if she didn't get ready to go, he'd carry out the trundle-bed and then put her on it, and hitch the oxen to it and take her in that way. Fearing he'd do something desperate, she dressed as usual, and found awaiting her the ox-cart backed up to the door. So in that, she and the children went to meetin'.

"Arrived at the meetin' house, he hastily pulled out the balance-pin and tumbled them in a heap on the ground and then stood by chuckling to see them scramble up."

"What a brute!" ejaculated Clarence.

"My father said that after that he often forced his family to go in the cart, apparently for the pleasure of seeing them hurry to get out, poor things, before he could get hold of the pin.

"Finally, the poor woman died, and went to rest, it is to be hoped. A second wife soon took her place, but was short-lived. Mr. —— expressed his sense of loss in this wise:

"'She was a good worker, a small eater and even tempered. I'd ruther lost the best cow on the place than her.'

"But he was soon looking for another

wife, and after many rebuffs succeeded in winning a shrewd, smart, high tempered woman who had been a tailoress in his household many different times, and therefore knew him thoroughly, and had made up her mind that she could manage him.

"He, too, knowing her temper, had made up his mind that it would require some very startling treatment right in the beginning to subdue her—before she should have time to get the upper hand of him.

"So, upon reaching home, immediately after the marriage ceremony, he took her to the kitchen to prepare dinner. Handing her the water pail, he told her to go to the spring and get some water. The request surprised her, but thinking she would not rebel at so early a date she obediently went, while he stood in the doorway and watched her. When she returned he took the pail and dashing the water on the ground told her to refill it.

"Again surprised, she was still obedient, thinking that perhaps there was something in the water she had not noticed. But again he took the pail from her, and dashing out the water, told her, as before, to go and get more. Then she knew that he was trying to show her that he was not afraid of her, and that he intended to be the master. Then she thought to herself, 'I *will* get more, and I'll use it, too.'

"As she approached the door again, he smilingly commenced to say that she had been very good, and might come in now, but never finished his gracious remark, for the entire contents of that pail landed on his head and completely deluged him and his wedding suit to his feet.

"She then told him that when he wanted her to cook dinner he was first to bring water and start a fire, after doing which he could call her. Then passing to another part of the roomy house, with which she was so familiar, she felt that from that hour she was not only its true mistress, but that she could hold its master in wholesome subjection. This experience, afterward freely narrated to curious friends, furnished subject for general rejoicing. So, you see, Clarence, that a seeker of wealth must take time to cultivate the amenities of life, if he would be held in kindly esteem by his fellow men. But, see; I've moved my chair, and my bower is tumbling around me; a hint, perhaps, that I should stop talking."

"No, no; not yet. Surely you have not exhausted your stock of the old-time domestic lore."

"No, indeed. Almost every day something recalls these relics of the past. Let me think—oh, yes—I over-heard that new acquaintance of yours, Clarence, saying that he hoped he should find a better lot of fellows here than in the town he had left—not one there he cared for, he said."

"Yes, I remember. I wondered what sort he is himself."

"Well, his remark reminded me of what an old inn-keeper on the great National Road once related, as repeated by my father. A constant stream of emigrants, bound for the west, were his patrons. It so happened that within a month two men who were from the same place, and stopped with him over night, were going to the same place. One of these regretted that in changing his home he had to leave behind such good, kind neighbors. The other man congratulated himself that in going west he was getting rid of a disagreeable, quarrelsome lot of people. The wise old landlord assured the first man that he'd find just such good people where he was going. He told the second man that though he was sorry to say it, he might as well know it in advance, that he'd find the same kind of people where he was going to as those he had left.

"So clearly had the old man learned to read human nature.

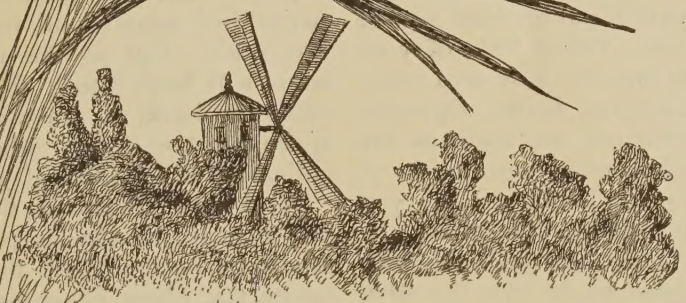
"Now, my dears, because I leave you so soon, this ends the last talk of the kind until we meet again. Why don't I stay longer? One reason is—but here comes your unstable bower on my lap and yours—a yoke of it fast about my neck, and my head-dress hanging to a twig. No matter; sit still a moment. Never mind my reasons for going home; if you can spend the coming holidays with me, as I hope, you'll learn them fast enough then. For the present we'll get from under this woodland plunder."

Says Kathleen, "A rhyme! I wonder if that was a blunder?"

MARIA BARRETT BUTLER.

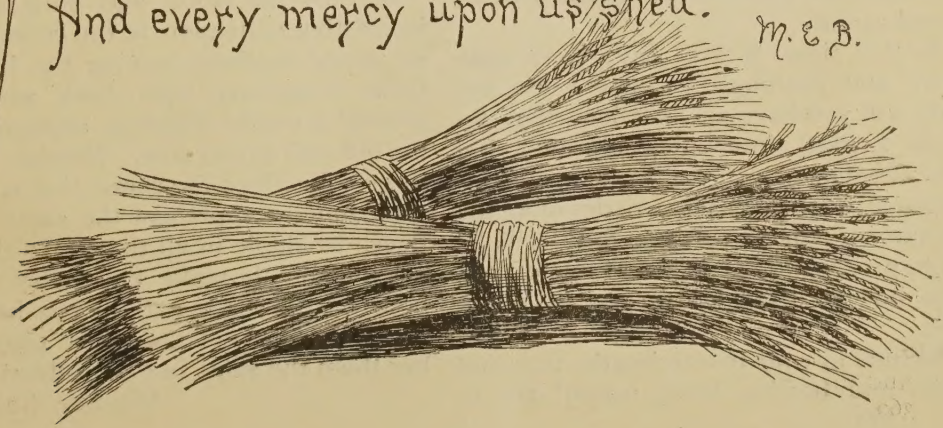
Golden Grain.

The Summer sun-shine and Summer rain
Have ripened the fields of waving grain;
Then came the reapers and laid it low,
This bright golden grain which they did sow.



They tied it in sheaves, and bound it round,
'Twas sent to the mill, to flour 'twas ground.
So, thanks be given for daily bread,
And every mercy upon us shed.

M. E. B.



What does Burdock look like? Probably almost every farmer-boy can tell. Those who cannot are fortunate in location, if not in experience But what does the seed look like? Ah, there are not so many of us that know. I will venture to say that not four farmers in ten can tell. The burr is but a cover and protection to the seed. If you will pull one open you will find the seed itself is not so very unlike Sunflower seed in general appearance, though smaller in size.

Perhaps no one thing distinguishes the good farmer from the poor one more readily than the former's superior knowledge and attention to little but important details like the above. Quick recognition of such seeds may often save him a great deal of trouble. And the time employed in studying them can hardly be more pleasantly spent. A little pocket lens will be found useful in examining many seeds and different parts of grasses and other plants.

Divide a box, one or two inches deep, into compartments about an inch square and number them. Put a little of your Burdock seed in one of these and enter the number in a blank book. Opposite this number write out the name of the seed, with as complete a description of the plant, its growth, habits, etc, as you choose or can obtain. Treat all the other kinds of weeds in the same way, and in another case, made like the first, arrange the various grains and valuable grasses.

After a little practice in this, prepare a case for the different kinds of wheat, Fultz, Lancaster, Democrat, Clawson, etc. Learn to tell all the more important kinds apart at sight. A knowledge of the different varieties of Beans will be found useful.

By this time, if you have been complete and thorough in your work, not only will you have an excellent start toward a most interesting museum, but your knowledge of the growth, appearance and general characteristics of all the commoner plants of the farm will be more practical than a term or two of college botany, even if it is not as scientific.

Include in your researches the nuts and fruits and berries, being careful not to mistake the pulp and outer cover for the seed. The more complete the descriptions in your book the better. Notice the time of ripening, the best kind and condition of the soil for each, and compare records of different years. Don't forget the garden vegetables, or the flowers, both wild and tame.

This is no recreation limited to either boys or girls alone. It is equally adapted to both. There is nothing to hinder every farmer being something of a scientist, except neglect of opportunities.

When the course we are now describing is once entered upon its usefulness will be perceived, and it will open the door to researches in other directions.

Another interesting and attractive subject for the home museum is our native trees. Whenever any kind of tree is cut for wood or rails or lumber, split off a piece about half an inch thick, on a line from the bark to the center of the tree. The best specimens are found in trees of medium size, and should be cut about two inches square and half an inch, or less, thick. Cut so the light and dark wood will both show. Don't try to include the bark, as that would make the specimens too large. Make a separate collection of the bark, if you like.

Work your specimens down as smooth and as near one size as possible. Don't saw them, as it presses fine dust in between the fibers, changing and spoiling the effect of the natural wood. Use any instrument that shaves them off. Number the specimens and enter their names in a book, as with the seeds, and find out all you can about the hardness and durability both when exposed and under shelter, the use and approximate value of each.

Besides the wood and bark, another interesting collection is the cross section of young saplings, leaving the bark on. Quite frequently both bark and wood present a totally different appearance in the old and young tree. Number all the three collections the same, that is, let the same number represent the same kind of Beech or Maple in all three. In that way you need only make one entry in your book for the three, and if you have also saved the seeds of the forest trees, number them the same in that collection.

WILDER GRAHAME.